



**The Faculty of Medicine of Harvard University  
Curriculum Vitae**

**Date Prepared:** August 14, 2024  
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**Place of Birth:** Tehran, Iran

**Education:**

8/1999 M.D. Medicine Tehran University of Medical Sciences

**Postdoctoral Training:**

10/1999-6/2003	Research Fellow (Mentor: Dr. Bagher Larijani)	Endocrine and Metabolic Research Center Tehran University of Medical Sciences
10/2001-6/2003	Research Fellow Renal Diseases (Mentor: Dr. Mohammad Tabatabaiee)	Charity Foundation for Special Diseases Tehran, Iran
7/2003-6/2005	Research Fellow (Mentor: Dr. Robert W. Schrier)	University of Colorado Health Sciences Center
9/2004-6/2005	Research Fellow Obstetrics and Gynecology (Mentor: Dr. Farr R. Nezhat)	Icahn School of Medicine at Mount Sinai
6/2005-6/2006	Resident Obstetrics and Gynecology (Mentor: Dr. John Yeh)	State University of New York at Buffalo

8/2006-6/2009	Resident Obstetrics and Gynecology (Mentors: Dr. Jennifer R. Niebyl and Dr. Jerome Yankowitz)	University of Iowa
7/2009-6/2012	Clinical Fellow Maternal Fetal Medicine (Mentors: Dr. Winston A. Campbell and Dr. James F. X. Egan)	University of Connecticut
7/2012-8/2012	Vacation in Europe after 10 years straight of training	
9/2012-9/2014	Clinical Fellow Perinatal Surgery (Mentor: Dr. Michael A. Belfort)	Baylor College of Medicine Texas Children's Hospital
6/2024-6/2026	Master in Health Care Management	Harvard T.H. Chan, School of Public Health

**Faculty Academic Appointments:**

2012-2013	Clinical Faculty Instructor	Obstetrics and Gynecology	Baylor College of Medicine
2013-2017	Assistant Professor	Obstetrics and Gynecology	Baylor College of Medicine
2016-2018	Adjunct Professor	Obstetrics and Gynecology	East Virginia Medical School
2015-2019	Adjunct Asst Professor	Obstetrics and Gynecology	Stanford School of Medicine
2017-2021	Associate Professor	Obstetrics and Gynecology/Surgery	Baylor College of Medicine
2019-2023	Adjunct Assoc Professor	Obstetrics and Gynecology	Stanford School of Medicine
2020-2021	Assoc Professor	Neurosurgery	Baylor College of Medicine
2021-2022	Professor (tenured)	Obstet and Gynecol/Surg/Neurosurg	Baylor College of Medicine
2022-	Professor	Surgery	Harvard Medical School
2023-	Adjunct Professor	Obstetrics and Gynecology	Stanford School of Medicine
2023-	Professor	OB, GYN and Reprod. Biology	Harvard Medical School (Brigham and Women's Hospital and Beth Israel Deaconess Medical Center)
2024-	Adjunct Professor	Obstetrics and Gynecology	Tufts University School of Medicine

**Appointments at Hospitals/Affiliated Institutions:**

11/2012-2022	Medical Staff	Texas Children's Hospital
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11/2012-2022	Medical Staff	Ben Taub Hospital
10/2015-	Medical Staff	Sentara Norfolk General Hospital
10/2017-	Medical Staff	Lucile Packard Children's Hospital
6/2022-	Medical Staff Surgery	Boston Children's Hospital
6/2022-	Affiliate Staff Obstetrics and Gynecology	Brigham and Women's Hospital
6/2022-	Affiliate Staff Obstetrics and Gynecology	Beth Israel Deaconess Medical Center

**Major Administrative Leadership Positions:**

*Local*

2014-2022	Director, Fetal Surgery Fellowships (Perinatal Surgery and Fetal Intervention)	Baylor College of Medicine Obstetrics and Gynecology
2016-2022	Co-Chief, Maternal Fetal Surgery Obstetrics and Gynecology	Baylor College of Medicine
2018-2022	Chief, Division of Fetal Therapy and Surgery Obstetrics and Gynecology	Baylor College of Medicine
2022-	Director, Maternal Fetal Medicine	Boston Children's Hospital
2022-	Director, Maternal Fetal Care Center	Boston Children's Hospital
2023-	Director of Perinatal Surgery Fellowship	Boston Children's Hospital
2023-	Chief, Division of Maternal Fetal Medicine and Surgery	Boston Children's Hospital

**Other Professional Positions:**

2018-	Distinguished Visiting Professor (non-voting faculty position)	Tehran University of Medical Sciences Obstetrics and Gynecology
2019-	Honorary Visiting Professor (non-voting faculty position)	Shiraz University of Medical Sciences Obstetrics and Gynecology
2017-	Adjunct Clinical Professor	Stanford University School of Medicine
2024-	Adjunct Professor	Tufts University School of Medicine

**Committee Service:**

*Local*

2014-2018	Maternal Fetal Medicine Fellow Selection Committee	Baylor College of Medicine
2017-2022	Intra-uterine blood products transfusion group	Texas Children's Fetal Center
2017-2022	Congenital Lower Urinary Tracts Obstruction Group	Texas Children's Fetal Center
2017-2022	Obstetrics and Gynecology Residency Selection Committee	Baylor College of Medicine
2017-2022	Spina Bifida Tactics Group	Texas Children's Hospital
2017-2022	Congenital Diaphragmatic Tactics Group	Texas Children's Hospital
2017-2022	Multidisciplinary weekly meeting	Texas Children's Fetal Center
2017-2018	Selection Committee- Early Career and Star Award	Baylor College of Medicine
2018-2022	Center for Excellence Committee	Texas Children's Hospital
2019-2022	Co-Chair, Fetal Center Steering Committee	Texas Children's Hospital
2019-2022	Pediatric Cardiology Fellow Scientific Oversight Committee	Texas Children's Hospital
2019	Co-Director, Simulation Course	Texas Children's Hospital
2020-2022	Physician Champion for Austin North Campus (Leading Women's Health Team for developing new maternity unit)	Texas Children's Hospital
2020-2022	Hospital Credentials Committee	Texas Children's Hospital
2020-2022	Pavilion for Women Quality Operations Committee	Texas Children's Hospital
2021-2022	Promotions and Advancement Committee, Depart. of Obstetrics and Gynecology	Baylor College of Medicine
2021-2022	Co-Director of Fetal Medicine Webinar series	Baylor College of Medicine and Texas Children's Hospital
2022-2023-	Member, Post Dobbs Committee Promotion Committee	Boston Children's Hospital Harvard Medical School

*National*

2020-2023	Steering and Publication Committee (Pregnancy CoRonavIrus Outcomes RegIsTrY)	PRIORITY
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*International*

2000	Executive Committee Scientific Advisory Board International seminar on thalassemia update (Molecular genetics and therapeutic aspects) 4-5 November	Tehran University of Medical Sciences
2001	Executive Committee Congress of Hepatitis and Special Disease 7-8 March	Baghiatollah University of Medical Disease
	Executive Committee New horizons in education and treatment of diabetes Endocrinology and Metabolism Research Center International Diabetes Federation 16-17 May	Ministry of Health and Medical Research
2002	Executive Committee Scientific Advisory Board	Tehran University of Medical Sciences

First International Congress on Complication of  
Thalassemia in Adolescents  
2-4 May

2015 International Expert Committee of invasive placentation Baylor College of Medicine  
(IP) The goal of this project was to develop clear and  
comprehensive clinical guidelines for IP.

**Professional Societies:**

2004- American College of Obstetrics and Gynecology (ACOG)  
2004- American Association of Gynecologic Laparoscopists (AAGL)  
2004- Iranian American Medical Association (IAMA)  
2008- Society of Maternal-Fetal Medicine (SMFM)  
2017-19 Co-Leader of the Scientific Committee of Placenta Accreta  
2020-23 Member, Education committee  
2020-23 Member, Global Health committee  
2020-23 Member, Research committee  
2022-2025 SMFM Expert Peer Review Consultant  
2022-2025 Vice Chair of Education Committee  
2024 Abstract reviewer for the 44th Annual Scientific Meeting  
2024 Abstract reviewer for the SMFM Global Congress  
2024-2026 Leader of the Scientific Committee of Maternal and Fetal Surgery  
2009- University of Iowa Obstetrics and Gynecological Alumni Society  
2009- American Institute of Ultrasound in Medicine (AIUM)  
2010- International Society of Ultrasound in Obstetrics and Gynecology (ISUOG)  
2023- VISUOG Obstetrics Section Editors  
2024- ISUOG Twins & Multiple Pregnancy Special Interest Group  
2010- Association of Professors and Scholars of Iranian Heritage (APSIH)  
2012- International Fetal Medicine and Surgery Society (IFMSS)  
2016 Member, Scientific Committee  
2013- North American Fetal Therapy Network (NAFTNet)  
2021-2024 Member, Education Committee  
2021-2024 Member, Finance Committee  
2021-2027 Member, Ethics Committee  
2021-2024 Member, Quality and Safety Committee  
2024-2027 Chair of Steering Committee  
2014- Society of Reproductive Investigation (SRI)  
2018 Abstract reviewer for the 65th Annual Scientific Meeting  
2018 Judge/moderator at the 65th Annual Scientific Meeting  
2019 Judge/moderator at the 66th Annual Scientific Meeting  
2019 Moderator of Epidemiology and Global Health at 66th Annual  
Scientific Meeting  
2020 Judge/moderator at the 67th Annual Scientific Meeting  
2021-2024 Member, Early Career Committee  
2024 Abstract reviewer for the 71th Annual Scientific Meeting  
2024 Judge/moderator at the 71th Annual Scientific Meeting  
2014- International Society of Prenatal Diagnosis (ISPD)  
2018 Abstract reviewer for the 22nd ISPD Annual Scientific Meeting  
2019-2022 Member, Membership Committee  
2024 Abstract reviewer and poster judging for the 28nd ISPD Annual  
Scientific Meeting, Judge  
2024-2027 Board of Director

2019-	International Fetal Immunology and Transplantation Society (iFeTIS)
2019-	Fetal Heart Society (FHS)
	2021-2023 Member, Research Committee
2020-	Pan-American Society for Placenta Accreta Spectrum (PAS2)
	2020- Co-Founder
	2020- Chair, Research Committee
	2022- Member, Organizing Committee of the 2nd Annual Meeting PAS2
2023-	World Association of Perinatal Medicine (WAMP)
	2023- Board member
	2025 Co-Chair of WAMP meeting, Washington, DC, USA

**Grant Review Activities:**

2020-	Research Proposal and Applicant reviewer	University of Leuven, Belgium
2021-	Grant Reviewer	Veni UA (Dutch Research Council)
2021	Health Research Charities Ireland/Health Research Board, Grant application reviewers	

**Editorial Activities:**

2022-	Co-Editors-in-Chief of Clinical Obstetrics and Gynecology (ISSN: 0009-9201, Online ISSN: 1532-5520, Frequency: 4 issues / year, Impact Factor: 2.190)
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*Ad hoc Reviewer*

Obstetrics and Gynecology  
 American Journal of Obstetrics and Gynecology  
 BJOG: An International Journal of Obstetrics and Gynaecology  
 Prenatal Diagnosis  
 Journal of Ultrasound in Medicine  
 American Journal of Perinatology  
 Ultrasound in Obstetrics and Gynecology  
 Fetal Diagnosis and Therapy  
 Journal of Maternal Fetal and Neonatal Medicine  
 Acta Obstetrica et Gynecologica Scandinavica  
 Journal of Obstetrics and Gynecology  
 Minera Ginecologica  
 The Journal of Obstetrics and Gynaecology Research  
 Journal of Assisted Reproduction and Genetics  
 Journal of Gynecologic Oncology  
 American Journal of Kidney disease  
 British journal of Haematology  
 Journal of Medicine and Medical Sciences  
 Iranian Journal of Pediatrics  
 OMICS Publishing group  
 Turkish Journal of Family Medicine & Primary Care

**Other Editorial Roles:**

2014-	Editorial Board Member	Iranian Journal of Surgery
2016-	Editorial Board Member	Iranian Journal of Pediatric Surgery

**Honors and Prizes:**

- 2003 WHO CC grants, “4th European Congress on Clinical and Economic Aspects of Osteoporosis and Osteoarthritis”, Nice, France, November 2003.
- 2003 Young Scientist Award, “The 9th European Nutrition Conference”, Rome, October 2003.
- 2004 Academic Research Appreciation Award, from Charity Foundation for Special Diseases (CSFD), Tehran, Iran, 2004.
- 2006 Young scientist award, “Iranian American Medical Association (IAMA)”, 13th Annual Meeting, May 26-29, 2006, Rutherford, NJ.
- 2006 Blue Ribbon Abstracts, (abstracts that received the highest ranking), “ACOG 54th Annual Clinical meeting”, May 6-10, 2006 Washington, DC. 2006
- 2006 Finalist, Arnold P. Gold Foundation Humanism and Excellence in Teaching Award: SUNY at Buffalo.
- 2008 Nominated for the Resident of the year, University of Iowa, April 2008.
- 2008 Blue Ribbon Abstracts, (abstracts that received the highest ranking), “ACOG 56th Annual Clinical meeting”, May 3-7, 2008, New Orleans, LA
- 2008 and 2009 Golden Apple for Excellence in Teaching Award, University of Iowa College of Medicine
- 2009 “Recipient, Young Investigator’s Travel Award”, the American College of Obstetricians and Gynecologists (ACOG), presentation at Stump the professor session, “57th ACOG Annual Clinical Meeting”, May 2-6, 2009 Chicago, IL.
- 2010 Young Scientist Award, “Iranian American Medical Association (IAMA)”, 17th Annual Meeting, May, Las Vegas, NV.
- 2010 APSIH Young Scholar, (the highest award of APSIH), “Association of Professors and Scholars of Iranian Heritage (APSIH)”, May 2010.
- 2010 Recognition of Excellence in Medical Education, “Association of Professors and Scholars of Iranian Heritage (APSIH)”, May 2010.
- 2011 Blue Ribbon Abstracts, (abstracts that received the highest ranking), “the American College of Obstetricians and Gynecologists (ACOG) 59th Annual Clinical Meeting”, April 30-May 4, 2011, Washington, DC.
- 2011 Excellence and Innovation Award, “Society for Fetal Urology (SFU) 47th Biannual Meeting”, October 14, Boston, MA.
- 2012-2017 O-1 visa (non-immigrant temporary worker visa) granted by the United States Citizenship and Immigration Services for extraordinary ability in the sciences-five years (09/2012-06/2017).
- 2013 Nominated for the New Investigator Award, “American Institution of Ultrasound in Medicine (AIUM), April 6-10, 2013, New York City, NY.

- 2013 Elected as the “Best Articles from the Past Year in Ultrasonography” by Robert Resnick for “Fetal Hydronephrosis as a Predictor of Neonatal Urologic Outcomes. J Ultrasound Med 2012; 31:947–954.” Obstet Gynecology June 2013; 121: 1352-9.
- 2016 Best oral presentation in the fetal intervention from 36th Annual Meeting, Society for Maternal-Fetal Medicine (SMFM), February 1-6, 2016, Atlanta, GA.
- 2016 The U.S. Department of Health and Human Services (HHS) recommended the J-1 waiver on 07/2016. Due to research performed in an area of priority and significant interest to USA.
- 2017 Early Career Faculty Award for Excellence in Patient Care Baylor College of Medicine
- 2017 Resident Research Mentor of the Year Baylor College of Medicine
- 2018 Elected as the “Best Articles from the Past Year in Morbidly Adherent Placenta” by Jodi S. Dashe for “Multidisciplinary team learning in the management of the morbidly adherent placenta: Outcome improvements over time. Am J Obstet Gynecol 2017; 216: 612. e5.” Obstet Gynecol 2018 June; 131(6):1153-1155.
- 2019 Resident Research Mentor of the Year Baylor College of Medicine
- 2019 Certificate of Special Competence in Fetal Surgery Baylor College of Medicine
- 2020 Star Award for Excellence in Patient Care Baylor College of Medicine
- 2020 Faculty Alpha Omega Alpha (AOA) Baylor College of Medicine
- 2020 Norton Rose Fulbright Faculty Excellence Award Baylor College of Medicine
- 2021 Research Mentor of the Year Baylor College of Medicine
- 2022 Distinguished Alumnus Award for Early Achievement University of Iowa Health Care

## **Report of Funded and Unfunded Projects**

### **Current**

#### **Developing novel MR tools to optimize surgical planning and fetal outcome in TTTS:**

The project, titled **R01HD114338-01A1**, led by PD/PI Grant/Adalsteinsson/Shamshirsaz at **Boston Children's Hospital**, proposes to develop novel magnetic resonance imaging (MRI) approaches to improve presurgical planning, directly assess placental function, and more closely monitor fetal growth with the overall goal of improving outcomes. This research will take place from **08/01/2024 to 04/30/2029**, with a total award amount, including indirect costs, of **\$3,592,610**.

#### **Mentored Junior Faculty Grants**

BWH Department of Anesthesiology, Perioperative and Pain Medicine. Faculty Development Starter Grant. Dr. Sebastian Seifert “Development of a Fetal Surgery Research Program”. \$75,000. 10-2023



## **Training Grants and Mentored Trainee Grants**

As a mentor “Placenta Accreta Spectrum Biomarker Investigation”, Dr. Bahram Salmanian, Baylor College of Medicine internal departmental funding. \$20,000

As a mentor “**Garite Mini-Sabbatical Grant from the Foundation for Society of Maternal-Fetal Medicine (SMFM) for Surgical Approaches and Outcomes of Minimally Invasive Fetoscopic Surgery at Texas Children’s Hospital**” by Dr. Jessian L. Munoz, August 24, 2020. \$10,000

As a mentor “**38th International Fetal Medicine and Surgery Society Annual Meeting, Young Scientist Award**” by Ahmed Nassr for “**Novel scoring system for determine fetal candidates for prenatal intervention in severe congenital LUTO**”, October 22-26, 2019, Sils, Switzerland. \$2,000

## **Report of Local Teaching and Training**

### **Teaching of Students in Courses:**

2018-2021 Weekly lectures for the Baylor College of Medicine, medical students rotated on the Fetal Therapy and Surgery Division, 35-40 hr/yr

### **Formal Teaching of Residents, Clinical Fellows and Research Fellows (post-docs):**

2012-2021 Monthly maternal fetal medicine fellow Journal clubs, MFM fellows, Baylor College of Medicine, 14-20 hr/yr

2014-2021 Moderator of the Multi-Disciplinary Fetal Care Conference (Multi-D) meetings at Texas Children's Hospital including students/residents/fellows/faculty (more than 10 different disciplines), 6-8 hr/yr

2015-2021 Weekly lectures for the Perinatal Surgery Fellows, Baylor College of Medicine, 30-40 hr/yr

2015-2021 Annual lectures for the Baylor College of Medicine, Ob-Gyn residents and Medical Students, 2-4 hr/yr

### **Curriculum Development Work (include institution where work was done)**

2015-2021 Curriculum design and development: Perinatal Surgery Fellowship and Fetal Intervention Fellowship Program, Department of Obstetrics and Gynecology/ Surgery, Baylor College of Medicine/ Texas Children’s Hospital.

2023- Curriculum design and development: Perinatal Surgery Fellowship, Department of Surgery, Boston Children’s Hospital/ Harvard Medical School.

### **Clinical Supervisory and Training Responsibilities:**

2012-2022 Daily surgery and clinical activities. Texas Children’s Hospital/Baylor College of Medicine

2016-2022 Supervise junior faculty, clinical fellows/residents/medical students. Texas Children’s Hospital/Baylor College of Medicine

2018-2022 As a chief of fetal therapy and surgery division, I am participating on all fetal procedures and supervise my team (estimate 150 cases per year). On call around 100 days per year. Texas Children’s Hospital/Baylor College of Medicine

2015-2022 As a Co-chief of maternal and fetal surgery section, I am participating as senior surgeon for all the placenta accreta spectrum surgeries both in Texas Children’s Hospital/Baylor College of Medicine and Ben Taub/Baylor College of Medicine (estimate 50 case per year). Another call schedule and on call around 100

days per year.

Fetal Therapy and Surgery Division (Texas Children's Hospital/Baylor College of Medicine) has 450-500 referral patients a year for consult regarding a fetal anomaly and as Chief, I supervised all the consultations (daily discussion with FTS team and weekly meeting with fetal center members)

2022- Daily surgery and clinical activities. Boston Children's Hospital/ Harvard Medical School.

2022- Supervise junior faculty, MFM faculty. Boston Children's Hospital/ Harvard Medical School.

2022- As a chief of division, I am participating on all fetal procedures and supervise my team (estimate 100 cases in the past two years). On call around 150 days per year. Boston Children's Hospital/ Harvard Medical School.

### **Research Supervisory and Training Responsibilities:**

Mentorship for multiple junior faculty/clinical fellows/residents/medical students/postdoc fellows (please see below)

### **Mentored Trainees and Faculty:**

#### **A. Clinical Fellow (current position) and Junior Faculty**

- 1993-present, Undergrad/Medical Student/ Postdoc Research Fellow/ Resident/ Clinical Fellow/ Junior Faculty, **Amir A Shamshirsaz, MD**. He is my younger brother and I have served as his mentor for over two decades. Currently, he is an assistant professor in the Baylor College of Medicine as MFM-critical care physician. We published together 51 articles of which he was first author on four, 84 abstracts and two book chapters.
- 2013-2022, Research postdoctoral/Resident/ Clinical Postdoc Fellow. **Bahram Salmanian, MD** was my mentee for more than 9 years. He was my research postdoctoral fellow from 2013 – 2015. He did match in the Obstetrics and Gynecology residency in Baylor College of Medicine and completed his residency in 2019 after serving as chief resident. He started his Maternal Fetal Medicine Fellowship in BCM and completed his clinical fellowship in 06/2022. Together, we published 29 original articles of which he was first author on five, 56 abstracts and one book chapter. His residency research project received the second place in resident research day in 2018. I was his MFM fellowship research mentor. He joined the University of Colorado Department of Obstetrics and Gynecology on 6/2022 as an assistant professor.
- 2015-2022, Fetal Surgery Fellowship/Junior faculty, **Ahmed A. Nassr, MD, PhD** / Associate Professor of Obstetrics and Gynecology. He was my first fetal surgery fellow. He was one of my junior faculty in Fetal Therapy and Surgery Division at TCH. We published together 118 articles of which he was first author on 21, 146 abstracts and five book chapters. As his mentor, he received “38th International Fetal Medicine and Surgery Society Annual Meeting, Young Scientist Award” for “Novel scoring system for determine fetal candidates for prenatal intervention in severe congenital lower urinary tract obstruction (LUTO)”, October 22-26, 2019, Sils, Switzerland.
- 2016-2017 **Oluseyi Ogunleye, MD**/ Assistant Professor of Obstetrics and Gynecology. Clinical Postdoc Fellow in Fetal Intervention Fellowship and I was his program director. We published two manuscripts. He is the Director of MFM/Fetal Surgery Program at Nationwide Children's Hospital, Ohio.
- 2016-2018, Fetal Surgery Fellowship, **James Fisher, MD**/ Clinical Postdoc Fellow in Perinatal Surgery. We published two manuscripts of which he was first author on one. He is Co-Director of Midwest Fetal Care Center as fetal surgeon at Abbott Northwestern and Children's Hospital of Minnesota in Minneapolis.
- 2019-2022, Junior Faculty. **Roopali Donepudi, MD**. I recruited her for my division in 2019 at TCH. She was my Associate Program Director for Fetal Surgery. We published 47 papers of which she was first author on nine and 65 abstracts together.
- 2020-2021, Fetal Surgery Fellowship, **Raphael Sun, MD**/ Clinical Postdoc Fellow in Perinatal Surgery. He is an Assistant Professor of Surgery and Co-Director of Fetal Therapy Program at Doernbecher Children's

Hospital, Oregon Health & Science University. We published 11 manuscripts together of which he was first author on one.

- 2020-present, Fetal Surgery Fellowship, **Eyal Krispin, MD** /Clinical Postdoc Fellow in Perinatal Surgery. He graduated from medical school at the Tel Aviv University. He was an intern in Rabin Medical Center and completed my Ob/Gyn Residency along with advances MFM and US training in Rabin and Sheba Medical Centers in Israel. He was my last fellow at TCH. We published 30 manuscripts of which he is first author on eleven, two book chapters and 41 abstracts together. As his mentor, he nominated the “26th International Conference on Prenatal Diagnosis and Therapy, Young Scientist Award” for “Intrauterine open neural tube defect repair - comparing systematic classification of maternal and fetal complication between open and fetoscopic approach”, June 20-24, Montreal, Canada. He joined me at Boston Children’s Hospital on 08/2022 as my colleague and Assistant Professor.

## **B. Research Postdoctoral**

- 2013-2015, **Pooya Javadian, MD** was my research postdoctoral fellow, who then matched in the Obstetrics and Gynecology residency. Currently, he is an Assistant Professor at the University of Oklahoma Health Sciences Center in the Department of Obstetrics and Gynecology. Together, we published 11 original articles of which he was first author on two and 21 abstracts.
- 2014-2016, **Pardis Hosseinzadeh, MD** was my research postdoctoral fellow, who then matched in the Obstetrics and Gynecology residency at BCM. Currently, she is a Reproductive Endocrine Infertility fellow at the University of Oklahoma Health Sciences Center in the Department of Obstetrics and Gynecology. Together, we published six original articles of which she is first author on two and nine abstracts.
- 2013-2014, **Amirhossein Moaddab, MD** was my research postdoctoral fellow, who then matched in Diagnostic Radiology residency at the Richmond University Medical Center, NY. He is currently a Cardiovascular Imaging Fellow in Brooklyn, NY. Together, we published 16 original articles of which he was first author on seven and 29 abstracts. One of his papers on which he was first author has been published in Lancet “Virginity testing in professional obstetric and gynaecological ethics”.
- 2014-2017, **Zhoobin H. Bateni, MD** was my research postdoctoral fellow, who then matched in family medicine residency. Together, we published seven original articles and 17 abstracts.
- 2015-2016, **Niloofer Karbasian, MD** was my research postdoctoral fellow, who then matched in Diagnostic Radiology residency at Yale. Together, we published two original articles and five abstracts.
- 2015-2023, **Hadi Erfani, MD, MPH** was my research postdoctoral fellow, who then matched in Obstetrics and Gynecology residency at BCM. He was my most productive research fellow. Together, we published 39 original articles of which he was first author on eight, 71 abstracts and one book chapter. As his mentor, he received the “Resident Best Research Project of Year” for his work “Placenta Accreta Spectrum and Urological Complications”, Baylor College of Medicine, Department of Obstetrics and Gynecology April, 2021. He is a gynecology oncology fellow at USC.
- 2018-2020, **Soroush Aalipour, MD** was my research postdoctoral fellow, who then matched in Obstetrics and Gynecology residency at BCM. Together, we published 15 original articles of which he was first author on one and 21 abstracts. He is an obstetrics and gynecology resident at Baylor college of Medicine.
- 2018-2020, **Romain Corroenne, MD** was one of our research postdoctoral fellows in the Fetal Therapy and Surgery Division. Together, we published 14 original articles of which he was first author on 10 and 16 abstracts. In 2019, he received the best oral communication in fetal intervention. “Motor function (MF) in myelomeningocele with or without prenatal repair: Evolution and correlation between US evaluation and clinical examination at birth and 12 months”. Corroenne R, Yopez M, Shamshirsaz AA, et al. Oral communication. OC 18.02. 29th International Society of Ultrasound in Obstetrics and Gynecology (ISUOG) World Congress on Ultrasound in Obstetrics and Gynecology. October 12th-16<sup>th</sup>, Berlin, Germany.
- 2020-2022, **Nazli Meshinchi Asl, MD** was my research postdoctoral fellow. Together, we published 4 original articles to date.
- 2021-2022, **Enrico Barrozo, PhD** is one of my research fellows who is working on basic science. He received the LRP award at 08/2022 through the Pediatric Research LRP from the National Institute of Allergy and Infectious Disease (NIAID). His LRP award is for a period of two years. Together, we published three original articles.

- 2021-2023, **Kamran Hessami, MD** was my research postdoctoral fellow who did follow me from Texas Children’s Hospital to Boston Children’s Hospital. Together, we published 32 manuscripts of which he was first author on 11 and 30 abstracts. He is an obstetrics and gynecology resident at Baylor College of Medicine.
- 2022-present, **Shohra Qaderi, MD** is my current research postdoctoral fellow at BCH. We published 7 manuscripts together.
- 2022-present, **Ali Javinani, MD** is my current research postdoctoral fellow. We published 14 manuscripts and 18 abstracts.
- 2023-present, **Nikan Zargarzadeh, MD** is my current research postdoctoral fellow. We published 6 manuscripts together.
- 2023-present, **May Abiad, MD** is my current research postdoctoral fellow.
- 2023-present, **Gulia Bonanni, MD** is my current research postdoctoral fellow.
- 2024-present, **Ehsan Rojhani, MD** is my research postdoctoral fellow.
- 2024-present, **Enaja Sambatur, MD** is my research postdoctoral fellow. We published one manuscripts together.

### C. Medical Students (only MS at Baylor College of Medicine)

- 2016 MS-3, 4 I have been involved in his research (2 months) and clinical training (1 month). Currently, **Elias Kassir** is an Obstetrics and Gynecology resident at the UCLA, CA. Together, we published three original articles of which he was first author of one and 7 abstracts.
- 2017 MS-3, 4 I have been involved in her research (2 months) and clinical training (1 month). Currently, **Alexandra Buffie** is an Obstetrics and Gynecology resident at the University of Pittsburg. Together, we published two original articles of which she was first author on one and two abstracts.
- 2017 MS-3, 4 I have been involved in her research (2 months) and clinical training (1 month). Currently, **Jaden Kohn** is an Obstetrics and Gynecology resident at the John Hopkins. Together, we published three original articles of which he was first author of three and four abstracts.
- 2017 MS-3, 4 I have been involved in her research (2 months) and clinical training (1 month). Currently, **Allison Sellner** is an Obstetrics and Gynecology resident at the Baylor College of Medicine. Together, we published one original article and five abstracts. As her mentor, she received the “Baruch A. Brody Award in Medical Ethics” for “To Intervene or Not to Intervene: An Ethical Framework Supporting the Performance of Fetal Surgery in the Presence of Maternal HIV/Hepatitis Seropositivity”.
- 2018 MS-3, 4 I have been involved in her research (2 months) and clinical training (1 month). Currently, **Kelsey Stewart** is an Obstetrics and Gynecology resident at the University of Minnesota. Together, we published five original articles and 9 abstracts.
- 2019 MS-3, 4 I have been involved in her research (2 months) and clinical training (1 month). Currently, **Jayne Elyse Castillo** is an Obstetrics and Gynecology resident at the University of Chicago. Together, we presented 4 abstracts and eight manuscripts of which he was first author of one.
- 2018 MS-2, 3, 4 I have been involved in her research (2 months) and clinical training (1 month). Currently, **Elizabeth Kravitz** is an Obstetrics and Gynecology resident at the University of Pennsylvania. Together, we published three original articles and 5 abstracts.
- 2018 MS-2, 3, 4 and general surgery residency I have been involved in his research (1 months) and clinical training (2 month). Currently, **Andres Espinoza** is a General Surgery resident at the Baylor College of Medicine and would like to apply in future for pediatric surgery fellowship. Together, we published three papers and 12 abstracts.

### Formal Teaching of Peers (CME and other continuing education courses):

*No presentations below were sponsored by 3<sup>rd</sup> parties/outside entities*

2016 “Advances and future perspectives of fetal therapy in the era of advanced prenatal genetic testing” at the Clinical Genetics Seminars/ Baylor College of Medicine, Houston, Texas

- 2017 “Multidisciplinary management of placenta accrete”, “Fetal hydrops: Diagnosis and management” and “Advances in Fetal Intervention: Fetoscopic vs open Myelomeningocele Repair”. The future of Women’s Health and Fetal Medicine: Contemporary Updates, Controversies and Collaboration, Houston, Texas
- 2018 “Fetal complications of multiple gestation, including twin to twin transfusion” at the Clinical Neonatal Seminars/ Baylor College of Medicine
- 2021 “Access in Anterior Placenta MC Pregnancies: The Role of Laparoscopic Assisted Access”. Fetal Medicine Webinar series, Baylor College of Medicine and Texas Children’s Hospital
- 2023 “A womb with a view: Past, present and future of fetal surgery”. The 59th Annual Update: Obstetrics and Gynecology Course sponsored by Harvard Medical School and the Brigham and Women’s Hospital.
- 2024 “New Avenues for Fetal Therapy”. The 60th Annual Update: Obstetrics and Gynecology Course sponsored by Harvard Medical School and the Brigham and Women’s Hospital

**Local Invited Presentations:**

*No presentations below were sponsored by 3<sup>rd</sup> parties/outside entities.*

- 2014 “Fetal Surgery” at the OB/GYN Grand Rounds Conference, Department of Obstetrics and Gynecology, Baylor College of Medicine, Houston, Texas
- 2017 “Fetal Surgery”, Surgery PA Fellowship Lecture Series, Texas Children’s Hospital 2017 “Morbidly Adherent Placenta, Advances in Treatment and Techniques”, Texas Children's Research Seminar
- 2018 “Launching fetal surgery fellowship in Iran: 2018 update”, Iranian American Medical Association (IAMA) Annual Meeting, Houston, Texas
- 2018 “What is new in fetal surgery? Texas Children’s Fetal Center Experience”, Iranian American Medical Association (IAMA) Annual Meeting, Houston, Texas
- 2019 “Moderating the simulation session on fetoscopic repair of myelomeningocele, fetoscopic neural tube defect (NTD) interest group meeting, Texas Children’s Hospital
- 2020 “Fetal intervention in Texas Children's Hospital: Inclusion criteria and outcomes”, Neonatology Perinatal Conference, Texas Children’s Hospital
- 2020 “Fetal Anemia”, Hematology case conference, Texas Children’s Hospital
- 2020 “Fetal Surgery”, Surgery PA Fellowship Lecture Series, Texas Children’s Hospital
- 2020 “Complications of multiple gestation, including twin-to-twin transfusion syndrome (TTTS)”, Neonatology Perinatal Center Conference, Texas Children’s Hospital
- 2020 “Lower urinary tract obstruction: Diagnosis, management and outcome”, Neonatology Perinatal Center Conference, Texas Children’s Hospital
- 2020 “Medical Careers”, American Medical Student Association at the University of Houston, Houston, Texas
- 2021 “US Boot camp - Neural tube defects - Diagnosis & in utero repair”. Texas Children’s Hospital
- 2021 “Medical Careers”, American Medical Student Association at the University of Houston, Houston, Texas

- 2021 “Fetal bladder outflow obstruction: Interventions, outcomes and management”, Pediatric Urology Grand Rounds, Texas Children’s Hospital
- 2021 “Fetal Surgery”. Surgery Physician Assistant Fellowship General Assembly Conference, Texas Children’s Hospital
- 2021 “Update of fetal surgery”. Grand Rounds Baylor College of Medicine
- 2021 “Update of fetal surgery”. Fetal Care Conference, Texas Children’s Hospital
- 2022 “State of the art management of multiple gestation”, Neonatology Perinatal Center Conference, Texas Children’s Hospital
- 2022 “Future of fetal surgery”. Fetal Care Conference, Texas Children’s Hospital
- 2022 “Advances in fetal imaging”. Neonatology Perinatal Center Conference, Texas Children’s Hospital
- 2022 “Twin Intervention”. Perinatal Rounds, Brigham and Women's Hospital
- 2022 “Fetal Surgery-evidence base”. Grand Rounds, Department of Surgery, Boston Children’s Hospital
- 2022 “Twin symposium”. Course Co-Director, Boston Children’s Hospital
- 2022 “Fetal Surgery for neural tube defect”. Grand Rounds, Department of Surgery, Boston Children’s Hospital
- 2023 “A womb with a view: Advances in fetal surgery”. Boston Children's Hospital Newborn Medicine Grand Rounds
- 2023 “Update of fetal surgery”. Brigham & Women's Hospital – 59th Annual Update in Obstetrics and Gynecology
- 2023 “Principals of imaging in fetal surgery”. Grand Rounds, Department of Radiology, Boston Children’s Hospital
- 2024 “Management options for selective growth restriction in monochorionic multiple pregnancy: controversies” Brigham and Women’s Hospital MFM Division/Fellows Lecture
- 2024 “Fetal surgery”, Super Bowl Grand Rounds, Boston Children’s Hospital
- 2024 “Fetal surgery landscape”, Scientific advisory Committee, Boston Children’s Hospital
- 2024 “Fetal Surgery-evidence base”, Grand Rounds, Division of Neonatology, Boston Children’s Hospital
- 2024 “My career journey”, HMS/HSDM Iranian Society, Harvard Medical School

**Report of Regional, National and International Invited Teaching and Presentations**

*No presentations below were sponsored by 3<sup>rd</sup> parties/outside entities*

*Regional*

- 2010 “CMV Infection in Pregnancy” for Obstetrics and Gynecology grand rounds in the Bridgeport Hospital, Yale New Haven Health, New Haven, CT
- 2011 “CMV Infection in Pregnancy” for Obstetrics and Gynecology grand rounds in the Bristol Hospital, Bristol, CT
- 2011 “CMV Infection in Pregnancy” for Obstetrics and Gynecology grand rounds in the Saint Francis Hospital and Medical Center, Hartford, CT
- 2011 “Twin Pregnancy” for Obstetrics and Gynecology grand rounds in the Bridgeport Hospital, Yale New Haven Health, New Haven, CT
- 2012 “Aneuploidy Screening” for Obstetrics and Gynecology grand rounds in the Bridgeport Hospital, Yale New Haven Health, New Haven, CT
- 2019 “Hematologic Disorders of Pregnancy (w/ anemia, thalassemia, hemoglobinopathies, thrombocytopenia)”, University of Texas Rio Grande Valley, Edinburg, TX
- 2021 “MFM Fellows lecture - Congenital Diaphragmatic Hernia- Imaging and Management”. The University of Texas Medical Branch at Galveston, Galveston, TX
- 2023 “A Womb with a View: Advances in Fetal Surgery”, at the OB/GYN Grand Rounds Conference, St. Elizabeth’s Medical Center, MA.
- 2024 “Update of Fetal Intervention”, UMass Memorial Health, Department of Obstetrics & Gynecology, MA
- 2024 “Fetal Surgery, Past, Present and Future”, MGH combined MFM/Genetics/neonatology virtual, MA

*National*

- 2012 “Tick borne disease in pregnancy” by the University of Columbia for the National Lyme and Tick-Borne Diseases Conference, Philadelphia, PA
- 2015 “Fetal surgery: Past, present and future” at the OB/GYN Grand Rounds Conference, Department of Obstetrics and Gynecology, Maimonides Medical Center, Brooklyn, NY
- 2016 “Accreta Consortium updates” at the scientific forum of the Society of Maternal Fetal Medicine (SMFM), Atlanta, GA
- 2016 “Fetal Surgery” at the OB/GYN Grand Rounds Conference, University of South Carolina, Columbia, SC
- 2017 “Accreta Consortium updates” at the scientific forum of the Society of Maternal Fetal Medicine, Las Vegas, NV
- 2017 Fellowship lecture series for Society of Maternal Fetal Medicine (webinar). “Fetal surgery- principles, indications and evidence”
- 2018 “Minimally invasive fetal surgery” at the OB/GYN Grand Rounds Conference, Cleveland Clinic, Cleveland, OH
- 2018 "Fetal surgery: 2020 and beyond", New England Perinatal Society (NEPS), Newport, RI

- 2018 “Lectures: Management of placenta accreta spectrum; Complications of Mo-Di twins; and Fetal surgery indications”, Grand Round and Postgraduate Course, University of Iowa, Iowa City, IA
- 2018 “Lecture: Placenta accreta spectrum: Advances in treatments and techniques”, Mississippi Perinatal Quality Collaborative, Jackson, MS.
- 2018 Society for Maternal-Fetal Medicine PAS Ultrasound Markers’ Task Force, Boston, MA
- 2019 “Complications of twin pregnancies”, University of Mississippi Medical Center Fellow Lecture, Jackson, MS
- 2019 “Leading placenta accreta scientific forums” at the Society of Maternal Fetal Medicine, 39th annual meeting, Las Vegas, NV
- 2019 “Update consortium database and the road map for research”, 1st Annual Meeting of the Pan-American Society for the Placenta Accreta Spectrum, Boston, MA
- 2019 “Fetal intervention: Innovation and beyond”, University of Mississippi Medical Center Grand Rounds, Jackson, MS
- 2019 “Lecture for residents (Management of placenta accreta spectrum)” and “Grand Round (Update in fetal surgery)”, University of Miami, Miami, FL
- 2020 “Fetal intervention: Principles, indications, evidence and update”, Lurie Children’s Center-Northwestern University, Chicago, IL
- 2021 “Fetal surgery”. University of Wisconsin MFM lecture series (webinar)
- 2021 “Ultrasound, fetal diagnosis and therapy for congenital diaphragmatic hernia”. University of Iowa (webinar)
- 2021 Co-Director of the postgraduate course, "Putting the “S” back into MFM: Obstetric Surgery in 2021.” SMFM’s 41st Annual Pregnancy Meeting in Las Vegas, NV
- 2021 Co-Director of the postgraduate course, “Iceberg Ahead! Obstetric Disaster Planning for Emerging Infectious, Environmental and Manmade Threats” SMFM’s 41st Annual Pregnancy Meeting™ in Las Vegas, NV
- 2021 Fellowship lecture series for Society of Maternal Fetal Medicine (webinar) “Intrauterine Growth Restriction-International perspective, TRUFFLE study and SMFM Updates”
- 2022 Fellowship lecture series for Society of Maternal Fetal Medicine (webinar) “Advance in in-utero neural tube defect repair”
- 2022 Co-Director of the luncheon roundtable “In Utero Fetal Gene Therapy and Curative Medicine”, SMFM’s 42 Annual Pregnancy Meeting, Orlando, FL
- 2022 Co-Director of the postgraduate course, “Placenta Accreta Spectrum: What MFMs need to know in 2022”, SMFM’s 42 Annual Pregnancy Meeting, Orlando, FL
- 2022 “Ultrasound, fetal diagnosis and therapy for congenital diaphragmatic hernia”. University of Arizona College of Medicine in Phoenix, AZ (webinar)



- 2022 “Update in Placenta Accreta Spectrum”. Mayo Clinic Combined OB/Anesthesia Grand Rounds Presentation, Rochester, MN.
- 2023 Co-Director of the postgraduate course, “Evolution of fetal anomalies from first to third trimester scan” and presenting “Fetal intervention”, SMFM’s 43 Annual Pregnancy Meeting, San Francisco, CA.
- 2023 Co-Director of the postgraduate course, “Management of Placenta accreta spectrum” and presenting “Timing, techniques, and team: the three T’s critical to success in surgical management of PAS”, SMFM’s 43 Annual Pregnancy Meeting, San Francisco, CA.
- 2023 “State of the art management of multiple gestation”, MFM Conference, University of Albany
- 2023 “Technology and fetal surgery”. Keynote lecture. Society of Thermal Medicine. San Diego, CA.
- 2023 “Latest innovations in fetal surgery”. Pediatrix Ground Rounds Webinar.
- 2023 “Ex-utero intrapartum treatment, indications and complications”. UCLA MFM division, CA.
- 2023 “Modern Fetal Surgery”, at the OB/GYN Grand Rounds Conference, Maimonides Medical Center, NY.
- 2023 “What is new in the field of fetal intervention”, Buffalo OB/GYN Society Meeting
- 2023 “Timing, techniques, and team: the three T’s critical to success in surgical management of PAS”, at the OB/GYN Grand Rounds Conference, University at Buffalo, NY.
- 2023 “Fetal surgery for neural tube defect, basics to bedside”, at the OB/GYN Grand Rounds Conference, Hackensack University Medical Center, NJ.
- 2024 “What is new in fetal surgery? Iranian American Medical Association (IAMA) Annual Meeting, New York, NY
- 2024 “Approach to fetal teratoma” at course of Pearls and Paradigms: Collaboration between MFM and subspecialties in maternal fetal surgery presented jointly with the North American Fetal Therapy Network (NAFTNet) and “FGR in twins, choice of charts” at course of Fetal Growth Restriction, Best Practices and Future Directions, SMFM’s 44 Annual Pregnancy Meeting, National Harbor, MD.

*International*

- 2013 “Fetal surgery” at the 34th Annual Congress of Iranian Society of Pediatrics, Tehran, Iran
- 2013 “Fetal surgery” at the 21st Iranian Society of Pediatric Surgery Congress, Tehran, Iran
- 2014 “Update of fetal surgery” at the 22nd Iranian Society of Pediatric Surgery Congress, Tehran, Iran
- 2014 “Neural tube defect and fetal surgery” at the 38th Annual Congress of Iranian Association of Surgeons, Tehran, Iran
- 2014 “Ultrasound and the surgeon” at the 38th Annual Congress of Iranian Association of Surgeons, Tehran, Iran
- 2014 “New advances in fetal surgery” at the 35th Annual Congress of Iranian Society of Pediatrics, Tehran, Iran

- 2014 “Twin pregnancy” at the 11th International Congress of Obstetrics and Gynecology, Tehran, Iran
- 2014 “Fetal intervention” at the 11th International Congress of Obstetrics and Gynecology, Tehran, Iran
- 2015 “Fetal surgery: Past, present and future” at the 12th International Congress of Obstetrics and Gynecology, Tehran, Iran
- 2016 “New approach to morbidly adherent placenta” at the 13th International Congress of Obstetrics and Gynecology, Tehran, Iran
- 2016 “Update in fetal surgery” at the 13th International Congress of Obstetrics and Gynecology, Tehran, Iran
- 2016 “Critical Care in Obstetrics and Gynecology” in Critical Care Workshop at the 13th International Congress of Obstetrics and Gynecology, Tehran, Iran
- 2017 “Pediatric cardiologist and fetal surgery” at 6th Iranian Congress of Pediatric Cardiology, Tehran, Iran
- 2017 “Fetal surgery and medical ethics” at 22<sup>nd</sup> Annual Congress of Iranian Society of Pediatric Surgeons, Tehran, Iran
- 2017 “Abnormal placentation”, “Fetal surgery program in Iran”, “How can you make your target scan easy” and “moderator of morbidly adherent placenta session”. 14<sup>th</sup> International Congress on Obstetrics and Gynecology, Tehran, Iran
- 2017 “Fetal surgery” in the 6th Asian Congress of Endometriosis & International Congress of Minimally Invasive Surgery. Tehran, Iran
- 2018 “Managing invasive placentation”, University of Toronto, Toronto, Canada
- 2018 Ultrasound in obstetrics; critical care in pregnancy workshop; post-partum hemorrhage workshop; and advances in fetal surgery. 15<sup>th</sup> International Congress on Obstetrics and Gynecology, Tehran, Iran
- 2018 Minimally invasive fetal intervention for complicated twin pregnancy and minimally invasive fetal intervention for congenital fetal abnormalities, International Congress of Minimally Invasive Gynecology & Obstetrics. Tehran, Iran
- 2018 “Placenta accreta spectrum treatment and outcomes”, XXI National Conference of Gynecology and Obstetrics, San José, Costa Rica
- 2019 “Fetoscopic Laryngo tracheoscopy”, XXI National Conference of Gynecology and Obstetrics 2018, San José, Costa Rica
- 2019 “Fetoscopic laser ablation of placental anastomoses in twin-twin transfusion syndrome using 'Solomon technique”, XXI National Conference of Gynecology and Obstetrics 2018, San José, Costa Rica
- 2019 “Epidemiology of perinatal/neonatal outcomes among twins stratified by mode of conception and the effect of advanced maternal age in the United States”, 20th Royan International Congress on Reproductive Biomedicine, Tehran, Iran
- 2019 “State of the ART management of monochorionic-diamniotic twins and fetal surgery”, 20th Royan International Congress on Reproductive Biomedicine, Tehran, Iran
- 2019 “Management and diagnosis of placenta accreta”, Placenta Accretismo, Medellin, Colombia

- 2019 “Panel discussion as a director: Postpartum hemorrhage”. 16th International Congress on Obstetrics and Gynecology, Tehran, Iran
- 2019 “Diagnosis and management of placenta accreta spectrum”. 16th International Congress on Obstetrics and Gynecology, Tehran, Iran
- 2019 “Managing growth restriction: Understanding our tests and their limitations in early and late disease”, 16th International Congress on Obstetrics and Gynecology, Tehran, Iran
- 2020 “Panel of post-quarantine challenges in medical sciences education sub-panel I: educational challenges in medicine”, Tehran University of Medical Sciences Symposium (webinar)
- 2020 “Timing and management at delivery, placenta accreta spectrum”, World School of Perinatal Medicine (webinar)
- 2020 “Placenta accreta spectrum”, Khesar Gyalpo University of Medical Sciences of Bhutan, International Lecture Series (webinar)
- 2020 “Multidisciplinary approach in medicine: Past, present and future”, 5TH Universal Scientific Education and Research Network (webinar)
- 2020 “Placenta previa: Incidence, diagnosis and management”, Khesar Gyalpo University of Medical Sciences of Bhutan, International Lecture Series (webinar)
- 2021 “Placenta percreta, surgical management”, XXIX annual symposium of Gynecology and Obstetrics of the Industrial University of Santander, Colombia (webinar)
- 2021 “Benefit of the fetal spine surgery: Open? Fetoscopic?” and “Abnormal placenta: previa with placenta accreta spectrum”, 18th Congress of Perinatal Medicine (webinar)
- 2021 “Placenta accreta spectrum management”, “Intrapartum ultrasound” and “Evidence based cerclage: Tips and tricks”, “Fetoscopic neural tube defect repair”. Virtual Conference of Obstetrics and Gynecology, Tehran University of Medical Sciences (webinar)
- 2021 “Treatment of huge placental chorioangioma”, “Primary fetal pleural effusion: shunt or no shunt?” and “Immediate cesarean hysterectomy for placenta accreta spectrum”. World Congress of Perinatal Medicine (webinar)
- 2021 “Evidence based cerclage: Tips and tricks”, Khesar Gyalpo University of Medical Sciences of Bhutan, International Lecture Series (webinar)
- 2021 “Thrombophilia and pregnancy”. Khesar Gyalpo University of Medical Sciences of Bhutan, International Lecture Series (webinar)
- 2021 “Placenta accreta spectrum management”. 16th International Congress of Gynecology & Obstetrics, Tehran, Iran. (webinar)
- 2021 “Multidisciplinary management of placenta accreta spectrum”. 6th Universal Scientific Education and Research Network (USERN). (webinar)
- 2022 “Thyroid disorders in pregnancy”. Khesar Gyalpo University of Medical Sciences of Bhutan, International Lecture Series. (webinar)

- 2022 “Immediate hysterectomy for placenta accreta spectrum” and “Cerclage in singleton”. The 4th Debatable Topics in Obstetrics, Gynecology and Infertility (DТОGI) Congress" organizers; (Preventative Gynecology Research Center (PGRC) of the Shahid Beheshti University of Medical Sciences (SBMU), Tehran, Iran. (webinar)
- 2022 “Fetal Heart Examination”, World School of Perinatal Medicine. (webinar)
- 2022 “Solomon versus selective fetoscopic laser photocoagulation for twin-twin transfusion syndrome”. 10<sup>th</sup> World Congress of Perinatal Medicine in Developing Countries, 1-5 June, Punta Cana, Dominican Republic.
- 2022 Instructor for “hands-on fetoscopy simulation workshop”, 26th International Conference on Prenatal Diagnosis and Therapy, Montréal, Canada.
- 2022 Co-Chair of the post-conference courses “Complex monochorionic twin pregnancies” and presenting “State of the art management of Twin Twin Transfusion syndrome”, 26th International Conference on Prenatal Diagnosis and Therapy. International Society for Prenatal Diagnosis (ISPD) sponsored by The North American Fetal Therapy Network (NAFTNet), Montréal, Canada.
- 2023 “Advance in fetal surgery”, International congress on gynecological diseases and Endometriosis, Tehran, Iran (webinar).
- 2023 “Timing delivery of women with PAS” and “Surgical treatment of PAS disorders: leaving placenta in situ” Placenta Accreta Spectrum: New Approach. World School of Perinatal Medicine. (webinar)
- 2023 “What is new in the field of fetal intervention”. Argentine Society for Prenatal Diagnosis and Treatment, SADIPT, Buenos Aires. .
- 2023 “Evolution of fetal anomalies from first to third trimester”. World Congress of Perinatal Medicine, Milan.
- 2023 “Advances in fetal surgery”. The 74th Annual Congress of the Japan Society of Obstetrics and Gynecology, Tokyo, Japan.
- 2023 “What is new for vasa previa”, “Placenta accrete spectrum: what happen to subsequent pregnancy” and “What is new for treatment of twin to twin transfusion syndrome”. National Perinatal Medicine Congress in Istanbul.
- 2023 “Fetal surgery for neural tube defect” and “Update for vasa previa care”. 109th Annual Congress of KSOG & 28th Seoul International Symposium
- 2024 “Vasa previa: our advancements from diagnosis with amnioscopy to treatment with fetoscopy”. Grand Rounds University of British Columbia, Canada. (webinar)
- 2024 “Advances in the diagnosis and management to vasa previa”, “Management options for selective growth restriction in monochorionic multiple pregnancy: controversies”, “Fetal anemia: approach and prenatal treatment”. XI Congress of Maternal Fetal Medicine, Guadalajara Mexico.
- 2024 “Modern Fetal Surgery”, Tehran University of Medical Sciences International Partners, Iran
- 2024 “Neural Tube defect and in-utero repair” and “Abdominal wall defects: Types, classification, and embryological basis”, World School of Perinatal Medicine (webinar)

- 2024 Co-Chair of the post-conference courses “Complex monochorionic twin pregnancies” and “hands-on fetoscopy simulation workshop” at 28th International Conference on Prenatal Diagnosis and Therapy. International Society for Prenatal Diagnosis (ISPD) sponsored by The North American Fetal Therapy Network (NAFTNet), Boston, USA

## **Report of Clinical Activities and Innovations**

### **Current Licensure and Board Certification:**

- Active Medical License: Massachusetts (2022-present), Texas (2012–present), California (2017-present) and Virginia (2015-present)
- Previous Medical Licensure: Connecticut (2010-2012)
- American Board of Obstetrics and Gynecology/Maternal-Fetal Medicine Subspecialty Certification (2016)
- Fellow of American College of Obstetrics and Gynecology (FACOG) (2015–present)
- American Board of Obstetrics and Gynecology Board Certification (2014)
- Educational Commission for Foreign Medical Graduates (ECFMG) Certified (2005)
- Permanent Medical License, Iran (2001)

### **Practice Activities:**

- 2012-2022 Inpatient/Labor and Delivery, Texas Children’s Hospital, Three half-day sessions per week (12 hours/week)
- 2012-2022 OB Clinic, Texas Children’s Hospital, One half-day sessions per week (4 hours/week)
- 2012-2022 Surgery, Texas Children’s Hospital, Three half-day sessions per week (12 hours/week)
- 2012-2022 Consult, Texas Children’s Hospital, Two half-day sessions per week (8 hours/week)
- 2012-2022 OB Ultrasound reading room, Texas Children’s Hospital, Two half-day sessions per week (8 hours/week)
- 2022- Consultant, Maternal Fetal Care Center, Boston Children’s Hospital
- 2022- Clinical Research, Boston Children's Hospital
- 2022- Administration of the Maternal Fetal Care Center, Boston Children's Hospital

### **Clinical Innovations:**

1. Established a specific multidisciplinary management team for patients with placenta accreta spectrum (2012-2015)

The institution of a standardized approach for patients with morbidly adherent placentation by an established multidisciplinary team was associated with improved maternal outcomes, particularly in cases with more aggressive placental invasion (increta or percreta), compared with a historic none multidisciplinary approach. This has become the standard of care in the United States and internationally for management of placenta accreta spectrum. This is a leading manuscript in the field (Reference #24) and it has drawn attention from both national and international audiences.

2. I highlighted the importance of a dedicated multidisciplinary team, and small collective changes over time when taking care of patients with placenta accreta spectrum. (2015-2017)

Patient outcomes are improved over time with increasing experience within a well-established multidisciplinary team performing 2-3 cases per month. I have demonstrated that small, collective changes in team dynamics and experience lead to continuous improvement of clinical outcomes. These findings support the development of centers of excellence for the management of women with a placenta accreta spectrum staffed by established multidisciplinary teams, which should routinely perform a significant number of these procedures on an ongoing basis (Reference #43).

3. Established high level evidence for the benefits of earlier planned delivery for severe form of placenta accreta spectrum (placenta percreta) which has led to change of practice (2017)

Women with placenta accreta spectrum requiring urgent delivery have a worse outcome than women with planned delivery. Accordingly, I demonstrated that women with a placenta accreta spectrum and two or more prior cesarean deliveries are at increased risk for urgent delivery. In such women, scheduling delivery before the standard 34- to 35-week timeframe may be reasonable. These findings changed the practice for delivering some of the placenta percreta patients at 33 weeks. My findings have both national and international merit and played an important role in a change of practice for these women with severe cases of PAS. (Reference #51)

4. I provided high-level evidence for the importance of risk factors other than prior cesarean delivery and placenta previa in patients with placenta accreta spectrum without previa in a multi-center collaboration. (2019)

Patients with placenta accreta spectrum (PAS) with previa and without previa are completely different entities. They are different regarding the risk factors, antepartum diagnosis and maternal outcomes. This study was the result of a collaboration between Texas Children's Hospital/Baylor College of Medicine and Brigham and Women's Hospital/ Harvard Medical School. I identified additional risk factors, including more operative hysteroscopies and *in vitro* fertilization and a lower rate of prior cesarean delivery for PAS without placenta previa as compared to PAS-previa. Among women with PAS, those with a coexisting placenta previa experienced higher maternal morbidity such as more blood loss at the time of delivery. In addition, PAS without placenta previa typically was not diagnosed prior to delivery. (Reference #87).

5. Identified that *in vitro* fertilization (IVF) is an independent risk factor for placenta accreta spectrum. (2020)

In the largest cohort study, I have shown that *in vitro* fertilization (IVF) is an independent risk factor for placenta accreta spectrum, although its relative clinical importance compared with that of the presence of placenta previa and history of cesarean delivery is small. This will provide information of value when discussing IVF with patients. In addition, in many institutions in the United States, this data is being used for risk stratification and sending the patients to the accreta centers for more detailed fetal scans. (Reference #89)

6. I developed a unique technique for treatment of severe twin to twin transfusion syndrome (TTTS) in monochorionic-diamniotic twins (2012-2021)

Here, I have reported a novel technique which is offered in some fetal centers around the world. In one decade of research, I have demonstrated that my novel laparoscopy-assisted fetoscopic photocoagulation method (FLPC) is a reasonable and safe option that may be offered in cases of FLPC where an anterior placenta restricts adequate surgical access. Also, despite the slight increase in risk of premature rupture of the membranes (PPROM), perinatal survival and maternal outcomes are similar to the conventional fetoscopic laser ablation of placental anastomoses for twin to twin transfusion syndrome (References #25 and 135).

7. Developed a novel scoring system for determining fetal candidacy for prenatal intervention for severe congenital lower urinary tract obstruction (2021)

I have proposed, for the first time, a novel scoring system (consisting of fetal urinary biochemistry, renal ultrasound parameters, initial bladder volume, and degree of bladder refill) for antenatal evaluation of patients with severe lower urinary tract obstruction which may be useful in selecting those candidates most appropriate for intervention and in counseling parents about predicted postnatal outcomes. (Reference #108)

8. Developed a standardized clinical algorithm for management of primary pleural effusion (2018)

The adoption of a relatively conservative protocol, with close follow-up and intervention only for evidence of high-pressure primary fetal pleural effusion that is causing impaired cardiac function and/or hydrops, has resulted in excellent perinatal survival. This clinical algorithm has been adopted by other fetal centers worldwide. (Reference #65).

9. Designing a low-fidelity simulator for the training of fetoscopic spina bifida repair (2018).

I have developed a low-fidelity endoscopic fetal surgery simulation for fetal spina bifida. This low-fidelity fetoscopic surgery simulator was found to be a useful tool for developing new fetoscopic operations and for training multidisciplinary fetal surgery teams without the need for extensive use of an animal model. This simulator has been utilized multiple times during of our fetal surgery courses and worldwide. (Reference #48).

10. Reported the most comprehensive maternal and long-term neonatal outcomes after ex-utero intrapartum treatment (EXIT), novel approach for reducing the need for EXIT and new technique for performing EXIT safely in subset of the patients (2018-2020)

I did provide the maternal and long-term neonatal outcomes after EXIT procedure and stressed the complexity of the obstetrical management in the EXIT procedure as well as improvements of maternal outcomes. I have introduced two novel strategies for the EXIT procedure. 1) Use a novel antepartum fetoscopic laryngotracheoscopic procedure to avoid complications associated with a non-essential EXIT procedure for a fetus with had a large neck mass (e.g hemangioma). I have shown that, under certain circumstances and after careful multidisciplinary consideration, use of diagnostic fetal laryngotracheoscopy may provide accurate predelivery evaluation of the fetal airway. Ultrasound and MRI cannot reliably establish complete upper airway obstruction in the fetus. 2) I have also introduced a novel step-wise approach in which exteriorization of the pregnant uterus, intraperative version, and fundal/posterior uterine access can provide an effective approach for performing the EXIT procedure in cases with complete anterior placenta (References 26, 29, 66, 67 and 99).

11. Development of the CO<sub>2</sub> gas insufflation technique for different fetoscopic surgeries (2015-2021)

CO<sub>2</sub> gas technique for insufflation of uterus can significantly increase the size of the operative field, and dramatically improve the ability to see, both of which allow the available fetoscopes to be used to their maximum capability. I did use this novel fetoscopic technique for treatment of different congenital anomalies such as pleuroamniotic shunt complications, amniotic band syndrome and laser surgery for twin-twin transfusion syndrome (References #18, 30, 41).

12. In my current position since 2022- My research primarily centers on the following three domains:

a) Innovative Fetal Intervention: My research team are exploring several innovative surgeries for patients with congenital hydrocephalus and vasa previa (FLUMEN study).

b) Innovative Medical Therapies: He has initiated two projects at his current position: one examining the efficacy of Sirolimus in congenital cervicofacial malformations (MaterPons study) and the other assessing the efficacy of Valacyclovir in treating congenital CMV infections.

c) Mesenchymal Stem Cells: His team is investigating the potential of MSCs in treating fetal anomalies.

**Report of Education of Patients and Service to the Community**

*No presentations below were sponsored by 3<sup>rd</sup> parties/outside entities (all base charity work)*

1. Developed the first Fetal Intervention/ Surgery Training Program in Iran.
2. Developed two fetal centers for the first time in Iran. I have been involved in helping their prenatal society by giving multiple lectures and consulting on obstetric cases, complications and improvement of care.
3. Performed the first Fetal Intervention/ Surgery in Iran (open fetal surgery, laser for TTTS, FETO).
4. Consultant for Maternal Fetal Medicine fellows, Iran since 2014
5. First fetoscopic Neural Tube Defect (NTD) repair at Hospital Italiano de Buenos Aires, Buenos Aires, Argentina, August 2019
6. First fetoscopic Neural Tube Defect (NTD) repair at Chris Hani Baragwanath Academic Hospital and Morningside Mediclinic, Johannesburg, South Africa, April 2019
7. First fetoscopic Neural Tube Defect (NTD) repair at Sheba Medical Center, Tel –Hashomer, Tel-Aviv University, Israel, January 2019
8. Collaborating with Dr. Gerardo Sepulveda for his fetal center in Monterrey, Mexico since 2014.
9. Bhutan project: Opportunity for Life, Inc. is a U.S. nonprofit Non-Governmental Organization (NGO) founded in 2014 by three physicians: one Bhutanese and two Americans. Its purpose is to improve the lives of mothers, neonates, and children in low and middle resource countries through medical care and health education. The Opportunity for Life project in Bhutan provides educational opportunities for residents, consultants, and staff. It primarily involves the department of obstetrics and gynecology but will overlap with other related areas. The goal is to improve the lives of the women and children in Bhutan consistent with the vision of the Ministry of Health of the Kingdom of Bhutan and the Khesar Gyalpo University of Medical Sciences of Bhutan. I have been involved in helping the program by giving multiple lectures and consulting on obstetric cases, complications and improvement of care.

### **Recognition:**

First Fetal Surgery in Middle East. Pars News. 05/2013

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## **Non-peer reviewed scientific or medical publications/materials in print or other media:**

*No presentations below were sponsored by 3rd parties/outside entities*

Computer-based instructional programs

2013-Present Website Medical field, using worldwide, Texas Children's Fetal Center website

Developing the materials and keep, it updates. Conditions we treat/advance diagnostics/procedure offered. Also, helping with developing multiple illustrations for the website. This is more than 100-page document for clinicians (physicians/nurses/midwives) and patients. This web content is the top Google search for any fetal anomalies with minimum 200 views a week.

Development of Texas Children's Hospital Fetal Center treatment algorithms, protocols and management

### **Reviews, chapters, monographs and editorials**

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10. **Alireza A. Shamshirsaz**, Venkata Bandi, David M. Muigai, Robert H. Ball, Michael A. Belfort: "Fetal Surgery Procedures and Associated Maternal Complications" Edited by: George Saade, Michael Belfort, Michael Foley, Jeffery Phelam, Gary Dildy. *Critical Care Obstetrics* Chap 56, 6th ed, Wiley-Blackwell, 2019: 303-315.
11. Michael A Belfort, **Alireza A. Shamshirsaz**, William Whitehead. "Open Neural Tube Defect Repair: Development and Refinement of a Fetoscopic Technique" From: *Fetal Therapy: Scientific Basis and Critical Appraisal of Clinical Benefits*. Editors: Mark D. Kilby, Anthony Johnson, Dick Oepkes. 2019. Chapter 45, 2nd edition, Cambridge, 467-480.

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#### **Editorial of Textbooks**

Editors: Michael A. Belfort, **Alireza A. Shamshirsaz**, Steven Clark and Karin Fox. *Operative Techniques in Obstetric Surgery*, First edition, Wolters Kluwer, 2022.

Chapters written by me:

1. Chapter 3.10 Surgical Principles of Fetal Interventions. Ahmed A. Nassr, Michael A. Belfort, and **Alireza A. Shamshirsaz**
2. Chapter 3.11 Uterine Defect Repair in an Ongoing Pregnancy. Eyal Krispin, Michael A. Belfort, and **Alireza A. Shamshirsaz**
3. Chapter 4.8 Placenta Previa. Bahram Salmanian, Michael A. Belfort, and **Alireza A. Shamshirsaz**
4. Chapter 4.9 Placenta Accreta Spectrum. **Alireza A. Shamshirsaz**, Amy Mehollin-Ray, Karin A. Fox, Amir A. Shamshirsaz, and Michael A. Belfort
5. Chapter 6.6 Management and Delivery of Conjoined Twins. **Alireza A. Shamshirsaz**, Amy Mehollin-Ray, and Michael A. Belfort

#### **Books written in Farsi**

1. **Alireza A. Shamshirsaz**, Hadi Erfani, Zhoobin H. Bateni, Amir A. Shamshirsaz: Farsi translation of the “*Ultrasound in Obstetrics & Gynecology: A Practical Approach*” Edited by: Alfred Abuhamad,

Contributing Authors: Rabih Chaoui, Phillippe Jeanty, Dario Paladini. First edition. This textbook has been written by Dr Alfred Abuhamad and his colleagues - and generously provided FREE by Dr Alfred Abuhamad in order to promote greater knowledge and understanding of the role, that ultrasound can play in the healthcare of women. This translation was requested directly from Dr. Alfred Abuhamad. This book is available free. This is a major textbook, widely used in Iran by radiologist/perinatologist/ultrasound technician / residents/ medical students. (327 pages)

### Letters to the Editor

1. Ruano R, Rodo C, Peiro JL, **Shamshirsaz AA**, Haeri S, Nomura ML, Salustiano EM, De Andrade KK, Sangi-Haghpeykar H, Carreras E, Belfort MA. Reply: To PMID 23616360. *Ultrasound Obstet Gynecol.* 2014 Feb; 43(2):239-40.
2. Belfort M, Whitehead W, **Shamshirsaz AA**, Ruano R, Cass D, Olutoye O. In Reply. *Obstet Gynecol.* 2015 Sep; 126(3):674-5.
3. McCullough LB, Moaddab A, Fox KA, Aagaard KM, Salmanian B, Raine SP, **Shamshirsaz AA**, Chervenak FA. Reply. *Am J Obstet Gynecol.* 2016 Jan; 214(1):137-8.
4. Erfani H, Fox KA, Belfort MA, Shamshirsaz AA. Preventing severe hypocalcemia during surgery for placenta accreta spectrum. *Acta Obstet Gynecol Scand.* 2019 Oct; 98(10):1358-1359.
5. Salmanian B, Belfort MA, **Shamshirsaz AA**. The risk of placenta accreta spectrum in women with in vitro fertilization in different populations. *Am J Obstet Gynecol.* 2021 Aug; 225 (2):210.
6. Salmanian B, Arian SE, **Shamshirsaz AA**. The role of in vitro fertilization-embryo transfer in development of placenta accreta spectrum. *Am J Obstet Gynecol.* 2021 Oct; 225(4):462.
7. Shinker SA, Zuckerwise LC, **Shamshirsaz AA**. Conservative Management of Placenta Accreta Spectrum: is it time? *Am J Obstet Gynecol.* 2022 Jun; 226(6):871.
8. Vidaeff AC, **Shamshirsaz AA**, Aagaard KM. SMFM Consult Series #58: Need for a clear evidence base to guide expanded use of antenatal corticosteroids for individuals at risk for late preterm delivery. *Am J Obstet Gynecol.* 2022 Jun; 226(6):876-877.
9. Hessami K, Qaderi S, **Shamshirsaz AA**. Obstetrical journal requirements for publication of systematic review and meta-analysis. *Am J Obstet Gynecol MFM.* 2022 Sep; 4(5):100644.
10. Salmanian B, Hessami K, **Shamshirsaz AA**. Reply to Letter to the Editors on the timing of delivery for placenta accreta spectrum: the Pan-American Society for the Placenta Accreta Spectrum experience. *Am J Obstet Gynecol MFM.* 2023 Jun; 5(6):100852.
11. Hessami K, Espinoza J, Salmanian B, Castro E, **Shamshirsaz AA**, Shamshirsaz AA. Placental basal plate myofibers and risk of hypertensive disorders of pregnancy. *Pregnancy Hypertens. Pregnancy Hypertens.* 2023 Sep;33:32-33.
12. Oyelese Y, Javinani A, **Shamshirsaz AA**. Perinatal Mortality Despite Prenatal Diagnosis of Vasa Previa: A Systematic Review. *Obstet Gynecol.* 2024 Feb 1;143(2):e22.

### Editorial

1. Pammi M, Clark SL, **Shamshirsaz AA**. Intrapartum maternal oxygen supplementation: Friend or foe? Editorial- *JAMA Pediatr.* 2021 Mar 1; 175(3):236-237.

### Professional Educational Materials or Reports, in print or other media:

#### Thesis:

**Shamshirsaz AA**, Ravangard SF, Egan JF, Prbulos AM, Shamshirsaz AA, Ferrer FA, Makari JH, Leftwich HK, Herbst KW, Billstrom RA, Sadowski A, Gurram P, Campbell WA. Fetal hydronephrosis as a predictor of neonatal urologic outcomes". *J Ultrasound Med* 2012 Jun; 31:947–954. (Prepared for my Fellowship in Maternal Fetal Medicine in 2012) (Received multiple awards, please see above).

**Abstracts, Poster Presentations and Exhibits Presented at Professional Meetings (in the past 3 years) (I did present more than 500 abstracts in the past two decades):**

1. Mendez-Figueroa H, Tolcher MC, **Shamshirsaz AA**, Pace R, Chu D, Aagaard KM. Impact of severe stress after a major natural disaster on perinatal outcomes. Oral presentation at 39th Annual Meeting, Society for Maternal-Fetal Medicine (SMFM), Las Vegas, NV, February 11-16, 2019.
2. Mendez-Figueroa H, Tolcher MC, **Shamshirsaz AA**, Pace R, Chu D, Aagaard KM. Increase in maternal and neonatal infections following Hurricane Harvey. Poster presentation at 39th Annual Meeting, Society for Maternal-Fetal Medicine (SMFM), Las Vegas, NV, February 11-16, 2019.
3. Erfani H, Mendez-Figueroa H, Aagaard KM, **Shamshirsaz AA**. It's Time for Maternal-Fetal Medicine Researchers to Tweet. Poster presentation at 39th Annual Meeting, Society for Maternal-Fetal Medicine (SMFM), Las Vegas, NV, February 11-16, 2019.
4. Michael A Belfort, Karin Fox, **Alireza A Shamshirsaz**, Stephanie Gordy, Laura J Moore, Alex Chau, Kamlesh Kukreja. Training obstetric providers in resuscitative endovascular balloon occlusion of the aorta in patients with placenta percreta. Reproductive sciences conference, March 2019.
5. Erfani H, Shamshirsaz AA, Ananth C, Vintzileos A, Clark S, Belfort M, **Shamshirsaz AA**. Association of changes in gestational age and twin prenatal mortality in the United States, 2000-2015. Poster presentation at 66th Annual Meeting, Society for Reproductive Investigation (SRI), Paris, France, March 12-16, 2019.
6. Xenia Chepa-Lotrea, Michael A Belfort, **Alireza A Shamshirsaz**, Ahmed Nassr, Magdalena Sanz-Cortes, Jimmy Espinoza Dorado. Changes in Fetal Doppler Parameters Following Ablation of Placental Anastomoses in Twin-Twin Transfusion Syndrome. Poster presentation at Annual Meeting, The American College of Obstetricians and Gynecologists (ACOG), Nashville, TN, May 3-6, 2019.
7. Angela Burgess, Tiffany Kautz, Maxim Seferovic, **Alireza A Shamshirsaz**, Benjamin D Belfort, Michael A Belfort, Kjersti M Aagaard. Characterization and time lapse experiments of fetal neuroprogenitor cells development derived from cerebral spinal fluid. Poster presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
8. Karin A Fox, Jayme Castillo, Tushar Shetty, Martha Rac, **Alireza A Shamshirsaz**, Christopher I Cassady, Michael A Belfort. Pannus sign on ultrasound and MRI predicts placenta percreta. Poster presentation at 40th Annual Meeting, Society for Maternal-Fetal Medicine (SMFM), Grapevine, Texas, February 3-8, 2020.
9. Andres F. Espinoza, Ozhan Turan, Christopher Harman, Michael A. Belfort, **Alireza A. Shamshirsaz**, Ahmed A. Nassr, Magdalena Sanz Cortes, Roopali Donepudi, Tiffany G. Ostovar-Kermani, Rebecca Johnson, Jimmy Espinoza. Worsening polyhydramnios in the recipient twin is associated with increased neonatal survival in TTTS. Poster presentation at 40th Annual Meeting, Society for Maternal-Fetal Medicine (SMFM), Grapevine, Texas, February 3-8, 2020.
10. Erfani H, Rezaei A, **Shamshirsaz AA**. Prevalence of perinatal mortality due to neoplasia in the United States (2015-2017): An epidemiologic study. SGO Annual Meeting, March 2020.
11. Marsoosi V, Eslamian L, Noorzadeh M, Naemi M, Jamal A, **Shamshirsaz AA**, Rahimian H. Operative performance of fetoscopic laser coagulation for Twin-twin transfusion syndrome at university-based hospital in Iran. (VP43. 13, 30th ISUOG Conference, 16-18 October 2020)
12. Corroenne R, Meoded A, Orman G, Shetty A, Castillo J, Castillo H, **Shamshirsaz AA**, Whitehead WE, Belfort MA, Sanz Cortes M. Association between ambulatory skills in spina bifida children and corpus callosum white matter DTI analysis. (VP21.14, 30th ISUOG Conference, 16-18 October 2020)
13. Development of a fetal porcine model for congenital viral infections in the developing CNS. Burgess A, Kautz T, Seferovic M, Belfort BD, **Shamshirsaz AA**, Belfort MA, Aagaard KM. Poster presentation at SMFM's 41st Annual Pregnancy Meeting in Las Vegas, Nevada. January 25-30, 2021.
14. Erfani H, Salmanian B, Aagaard KM, Fox KA, Meshinchiasl N, Shamshirsaz AA, Gogia S, Jackson J, Nassr AA, Espinoza J, Sangi-Haghpeykar H, Castro E, Clark S, Belfort MA, **Shamshirsaz AA**. Microscopic placenta accreta as a risk factor for placenta accreta spectrum in a subsequent pregnancy. Poster presentation at SMFM's 41st Annual Pregnancy Meeting in Las Vegas, Nevada. January 25-30, 2021.



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16. Gray L, Mendez Y, Lane K, Puryear L, **Shamshirsaz AA**, Nassr AA, Sanz-Cortes M, Espinoza J, Belfort MA, Donepudi R . The impact of fetal intervention on maternal perinatal mental health. Poster presentation at SMFM's 41st Annual Pregnancy Meeting in Las Vegas, Nevada. January 25-30, 2021.
17. Pelka M, Lopez KN, Salemi J, **Shamshirsaz AA**, Castellanos D, Morris SA. Trends in Preterm Delivery among Multiple Gestation Births with Critical Congenital Heart Disease. *Circulation* 144 (Suppl\_1), A13820-A13820. American Heart Association Scientific Sessions, Nov 13- 15, 2021, Boston.
18. Kamran Hessami, Kjersti M. Aagaard, Eumenia C. Castro, Sara E. Arian, Enrico R. Barrozo, Maxim D. Seferovic, **Alireza A. Shamshirsaz**. Placental histopathologic findings from pregnancies diagnosed with COVID-19: A systematic review and meta-analysis. Poster presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
19. Magdalena Sanz Cortes, Romain Corroenne, Jimmy Espinoza, Ahmed A Nassr, Roopali V Donepudi, Amy Mehollin-Ray, Rebecca Johnson, **Alireza A Shamshirsaz**, William Whitehead, Michael A Belfort. Maternal obstetrical risk factors for severe chorioamniotic membrane separation after laparotomy-assisted fetoscopic spina bifida repair. Poster presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
20. Raphael C Sun, Lauren Taylor, Rebecca Johnson, Yamely MendezMartinez, Eyal Krispin, **Alireza A Shamshirsaz**, Magdalena Sanz Cortes, Roopali V Donepudi, Ahmed A Nassr, Hendrick Lombaard, Michael A Belfort, Andy Espinoza, Mustafa Hiba, Ozhan M Turan, Christopher Harman, Jimmy Espinoza. Intertwin differences of cerebroplacental ratio are associated with increased neonatal survival in TTTS. Poster presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
21. Alison N Goulding, Karin A Fox, Christina C Reed, Bahram Salmanian, Kjersti M Aagaard, **Alireza A Shamshirsaz**. Examining disparities in severe maternal morbidity among pregnant people with placenta accreta spectrum. Poster presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
22. Kamran Hessami, Ahmed A. Nassr, Jimmy Espinoza, Roopali V. Donepudi, Magdalena Sanz cortes, Raphael C. Sun, Eyal Krispin, Nazlisadat Meshinchiasl, Michael A. Belfort, **Alireza A. Shamshirsaz**. Solomon versus selective fetoscopic laser photocoagulation for twin-twin transfusion syndrome: A systematic review and meta-analysis. Poster presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
23. Ahmed A. Nassr, Kamran Hessami, **Alireza A. Shamshirsaz**. Intrapartum ultrasound measured angle-of-progression for prediction of assisted delivery outcome: a systematic review and meta-analysis. Poster presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
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26. Ahmed A Nassr, Kamran Hessami, Jimmy Espinoza, Roopali V Donepudi, Magdalena Sanz Cortes, Michael A Belfort, **Alireza A Shamshirsaz**. Quintero-staging and gestational-age as predictors of single fetal demise in TTTS after laser-photocoagulation: a meta-analysis. Poster presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
27. Hiba J Mustafa, Katherine Goetzinger, Ali Javinani, Faezeh Aghajani, Christopher Harman, **Alireza A Shamshirsaz**, Magdalena Sanz Cortes, Roopali V Donepudi, Eyal Krispin, Ahmed A Nassr, Jimmy

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28. Eyal Krispin, **Alireza A Shamshirsaz**, Hiba J Mustafa, Raphael C Sun, Jimmy Espinoza, Ahmed A Nassr, Magdalena Sanz Cortes, Chilaka Harrison Ugoji, Christopher Harman, Ozhan M Turan, Michael A Belfort, Roopali V Donepudi. Impact of Middle cerebral Artery Pulsatility Index on Donor Survival in Twin-Twin Transfusion Syndrome. Poster presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
  29. Hiba J Mustafa, Ali Javinani, Katherine Goetzinger, Faezeh Aghajani, Eyal Krispin, Magdalena Sanz Cortes, Jimmy Espinoza, Ahmed A Nassr, Michael A Belfort, **Alireza A Shamshirsaz**, Roopali V Donepudi, Christopher Harman, Ozhan M Turan. Single fetal demise following fetoscopic ablation for Twin-to-Twin Transfusion syndrome-systematic review and meta-analysis. Poster presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
  30. Ahmed A Nassr, McKenna Gessner, Shayan Mostafae, Jimmy Espinoza, Roopali V Donepudi, Magdalena Sanz Cortes, Eyal Krispin, Raphael C Sun, Hiba J Mustafa, Ozhan M Turan, Christopher Harman, Michael A Belfort, **Alireza A Shamshirsaz**. Perinatal outcomes of twin to twin transfusion syndrome associated with evidence of twin anemia polycythemia. Poster presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
  31. Hiba J Mustafa, Ali Javinani, Christopher Harman, Eyal Krispin, **Alireza A Shamshirsaz**, Ahmed A Nassr, Magdalena Sanz Cortes, Roopali V Donepudi, Jimmy Espinoza, Michael A Belfort, Ozhan M Turan. Predictors of single donor demise following laser ablation in TTTS with selective fetal growth restriction. Poster presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
  32. Anna M Modest, Brett D Einerson, Albaro Jose Nieto, Vineet Shrivastava, **Alireza A Shamshirsaz**, Scott A Shainker. Risk factor profiles in in-vitro fertilization pregnancies that develop placenta accreta spectrum. Poster presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
  33. Eyal Krispin, Ahmed A Nassr, Roopali V Donepudi, Magdalena Sanz Cortes, Jimmy Espinoza, Hiba J Mustafa, Christopher Harman, Ozhan M Turan, Shayan Mostafae, Raphael C Sun, Michael A Belfort, **Alireza A Shamshirsaz**. Predicting dual survival for twin-twin transfusion syndrome following fetoscopic laser photocoagulation. Poster presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
  34. Maryshe S. Zietsman, Derek O'Neil, Maxim D. Seferovic, Matthew A. Shanahan, Enrico R. Barrozo, Michael D. Jochum, **Alireza A. Shamshirsaz**, Kjersti M. Aagaard. Steps to Fetal Gene Therapy: Disruption of Bcl11a erythroid-specific enhancer region with CRISPR/Cas9. Oral presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
  35. Bahram Salmanian, Scott A. Shainker, Rachel D. Seaman, Anna M. Modest, Eumenia Castro, Jonathan Hecht, Sarah Tounsi, Nazlisadat Mesh, Alec Brown, Amir A. Shamshirsaz, Steven Clark, Karin A. Fox, Michael A. Belfort, **Alireza A. Shamshirsaz**. The new pathology classification for placenta accreta spectrum is well associated with clinical outcomes. Oral presentation at SMFM's 42nd Annual Pregnancy Meeting in Orlando, Florida. January 31- February 5, 2022.
  36. Roni Zemet, Eyal Krispin, Rebecca M Johnson, Navya R Kumar, Michael A Belfort, **Alireza A. Shamshirsaz**, Ignatia B Van den Veyver. Chromosomal Microarray Analysis for Open Neural Tube Defect: The Prevalence of Significant Results and Implications on In Utero Repair. Oral presentation at ACMG Annual Clinical Genetics Meeting in Nashville TN. March 22-26, 2022.
  37. Eyal Krispin, Hiba J Mustafa, Jimmy Espinoza, Ahmed A Nassr, Magdalena Sanz- Cortes, Roopali Donepudi, Christopher Harman; Shayan Mostafaei, Ozhan Turan, Michael A Belfort, **Alireza A Shamshirsaz**. Predicting dual survival following fetoscopic laser photocoagulation for twin-twin transfusion syndrome. Poster presentation at the 26th International Society for Prenatal Diagnosis (ISPD), Montréal, Canada, 19-23 June.
  38. Eyal Krispin, Kamran Hessami, Rebecca M Johnson, Angel M Krueger, William Whitehead, Jimmy Espinoza, Ahmed A Nassr, Magdalena Sanz Cortes, Roopali Donepudi, Michael A Belfort, **Alireza A Shamshirsaz**. Intrauterine open neural tube defect repair - comparing systematic classification of

- maternal and fetal complication between open and fetoscopic approach. Oral presentation at the 26th International Society for Prenatal Diagnosis (ISPD), Montréal, Canada, 19-23 June.
39. A. Nassr, K. Ishii, R. Corroenne, M. Sanz-Cortes, R.V. Donepudi, J. Espinoza, R. Yamamoto, J. Stirnemann, M. Belfort, R. Chmait, **Alireza A. Shamshirsaz**. Outcomes of laser photocoagulation for monozygotic twins complicated by selective fetal growth restriction type II. Poster presentation at the 32nd ISUOG World Congress on Ultrasound in Obstetrics and Gynecology, London, UK, September 16-18, 2022
  40. L. Greenwood, L. Alpuing, K. Lane, L. Gray, R. Ivey, M. Sanz Cortes, A. Nassr, J. Espinoza, E. Krispin, **Alireza A. Shamshirsaz**, M. Belfort, K. Horst, R.V. Donepudi. Impact of diagnosis and management of fetal anomalies on maternal anxiety. Poster presentation at the 32nd ISUOG World Congress on Ultrasound in Obstetrics and Gynecology, London, UK, September 16-18, 2022
  41. R.V. Donepudi, A. Javinani, J. Espinoza, M. Sanz Cortes, A. Nassr, M. Belfort, **Alireza A. Shamshirsaz**. Perinatal outcome following intrauterine transfusion for red cell alloimmunised pregnancies: systematic review and meta-analysis. Poster presentation at the 32nd ISUOG World Congress on Ultrasound in Obstetrics and Gynecology, London, UK, September 16-18, 2022
  42. R.V. Donepudi, A. Javinani, A. Nassr, J. Espinoza, M. Sanz Cortes, M. Belfort, **Alireza A. Shamshirsaz**. Perinatal survival after intrauterine transfusion for RhD and Kell alloimmunised pregnancies: systematic review and meta-analysis. Poster presentation at the 32nd ISUOG World Congress on Ultrasound in Obstetrics and Gynecology, London, UK, September 16-18, 2022
  43. R.V. Donepudi, A. Javinani, M. Sanz Cortes, A. Nassr, J. Espinoza, M. Belfort, **Alireza A. Shamshirsaz**. Perinatal outcome following intrauterine transfusion for red blood cell alloimmunisation in cases with hydrops: systematic review and meta-analysis. Poster presentation at the 32nd ISUOG World Congress on Ultrasound in Obstetrics and Gynecology, London, UK, September 16-18, 2022
  44. A. Nassr, W. Whitehead, **Alireza A. Shamshirsaz**, J. Espinoza, R.V. Donepudi, M. Belfort, M. Sanz Cortes. Should fetuses with open neural tube defects and severe ventriculomegaly be considered candidates for in utero repair? Poster presentation at the 32nd ISUOG World Congress on Ultrasound in Obstetrics and Gynecology, London, UK, September 16-18, 2022
  45. Eyal Krispin, Ali Javinani, Anthony O. Odibo, Jena L. Miller, Julien Stirnemann, Asma Khalil, Kurt Hecher, Ramen H. Chmait, Elena Carreras, Mounria Habli, Stephen Emery, Gerardo Sepulveda, Mark Kilby, Liesbeth Lewi, Lucas Otano, Michael V. Zaretsky, Nicolas Sananes, Yoav Yinon, Welsh Alec William, Ozhan M. Turan, Mar Bannasar, Ramesha Papanna, Femke Slaghekke, Tim Van Mieghem, **Alireza Shamshirsaz**. Consensus protocols for the management of early and late twin-twin-transfusion-syndrome (TTTS), a delphi study. Poster presentation at SMFM's 43rd Annual Pregnancy Meeting in San Francisco, California. February 6-11, 2023
  46. Kevin S. Shrestha, Bahram Salmanian, Brett D. Einerson, Daniela A. Carusi, Scott A. Shainker, Alvaro J. Nieto-Calvache, Vineet Shrivastava, Matthew R. Grace, Deirdre J. Lyell, Meena Khandelwal, Garrett Fitzgerald, Adam Crosland, Kamran Hessami, Rebecca H. Jessel, Karin A. Fox, Robert M. Silver, **Alireza Shamshirsaz**, Akila Subramaniam. The association of increasing maternal body mass index on placenta accreta spectrum disorders. Poster presentation at SMFM's 43rd Annual Pregnancy Meeting in San Francisco, California. February 6-11, 2023
  47. Jimmy Espinoza, Alice King, **Alireza Shamshirsaz**, Ahmed A. Nassr, roopali V. donepudi, Magda Sanz Cortes, Amy Meholin-Ray, Eyal Krispin, Rebecca Johnson, Yamely MendezMartinez, Sundeep Keswani, Timothy Lee, Luc Joyeux, Andres F. Espinoza, Oluyinka Olutoye, Joseph Garcia-Prats, Caraciolo Fernandez, Ryan Coleman, Pablo Lohmann, Christopher Rhee, Jonathan Davies, Michael A. Belfort. Characterization of suboptimal responses to fetoscopic endoluminal tracheal occlusion in congenital diaphragmatic hernia. Poster presentation at SMFM's 43rd Annual Pregnancy Meeting in San Francisco, California. February 6-11, 2023
  48. Kara J. Shannon, Sarah VanLoh, Jimmy Espinoza, Magda Sanz Cortes, roopali V. donepudi, **Alireza Shamshirsaz**, Chester Koh, David Roth, Michael Braun, Joseph Angelo, Michael A. Belfort, Ahmed A. Nassr. Fetal bladder morphology may predict neonatal outcomes in fetal lower urinary tract obstruction (LUTO). Poster presentation at SMFM's 43rd Annual Pregnancy Meeting in San Francisco, California. February 6-11, 2023
  49. Brett D. Einerson, Amanda A. Allshouse, Scott A. Shainker, Meena Khandelwal, Alvaro J. Nieto-Calvache, Garrett Fitzgerald, Akila Subramaniam, Vineet Shrivastava, Lisa C. Zuckerwise, Christine M.

- Warrick, Karin A. Fox, Daniela A. Carusi, **Alireza Shamshirsaz**, Deirdre J. Lyell, Bob M. Silver. Severe morbidity for placenta accreta spectrum has decreased over time in referral centers. Poster presentation at SMFM's 43rd Annual Pregnancy Meeting in San Francisco, California. February 6-11, 2023
50. Enrico R. Barrozo, Angela P. H. Burgess, Alondra Carmona, Maryshe S. Zietsman, Maxim D. Seferovic, **Alireza A. Shamshirsaz**, Michael A. Belfort, Kjersti M. Aagaard. Distinct neuronal subtypes in fetal CSF characterized by single-cell transcriptomics. Oral presentation at SMFM's 43rd Annual Pregnancy Meeting in San Francisco, California. February 6-11, 2023
  51. Kamran Hessami, Juana Hutchinson-Colas, Frank A. Chervenak, **Alireza A. Shamshirsaz**, Nikan Zargarzadeh, Amirhossein Norooznejhad, Amos Grunebaum, Gloria Bachmann. Prenatal care disparity and pregnancy outcome among incarcerated pregnant individuals in the United States. Poster presentation at SMFM's 43rd Annual Pregnancy Meeting in San Francisco, California. February 6-11, 2023
  52. Bahram Salmanian, Kamran Hessami, Karin Anneliese Fox, Hadi Erfani, Eumenia Castro, Jonathan Hecht, Soumya gogia, Josef N. Jackson, Elaine Dong, McKenna Gessner, Mary Fang, Mariana D. Baroni, Soroush Alipour, Scott A. Shinker, Anna M. Modest, **Alireza A. Shamshirsaz**, Amir A. Shamshirsaz. Risk factors and clinical significance of placental basal plate myometrial fiber: a single center experience. Poster presentation at SMFM's 43rd Annual Pregnancy Meeting in San Francisco, California. February 6-11, 2023
  53. Kamran Hessami, Jimmy Espinoza, Bahram Salmanian, Eumenia Castro, **Alireza A. Shamshirsaz**, Amir A. Shamshirsaz. Placental basal plate myofibers and risk of hypertensive disorders of pregnancy. Poster presentation at SMFM's 43rd Annual Pregnancy Meeting in San Francisco, California. February 6-11, 2023

### UpToDate

**Peer review:** Placenta accreta spectrum: Management; Placenta accreta spectrum: Clinical features, diagnosis, and potential consequences; Diagnosis and management of twin reversed arterial perfusion (TRAP) sequence; Placental abruption: Pathophysiology, clinical features, diagnosis, and consequences; Placental abruption: Management and long-term prognosis; Congenital pulmonary airway malformation: Prenatal diagnosis and management; Bronchopulmonary sequestration: Prenatal diagnosis and management; Acute placental abruption: Pathophysiology, clinical features, diagnosis, and consequences

**Author:** Open spina bifida: In utero treatment and delivery considerations. Krispin E, Mehollin-Ray A, **Shamshirsaz AA**

### Visual Encyclopedia of Ultrasound in Obstetrics and Gynecology (VISUOG)

Section Editor of "Obstetrics Ultrasound guided procedures section" for VISUOG, Shamshirsaz AA

1. Krispin, E; Javinani, A; Guseh, SH: Ultrasound-Guided Fetal Surgeries: Techniques and Applications, *Visual Encyclopedia of Ultrasound in Obstetrics and Gynecology*, [www.isuog.org](http://www.isuog.org), January 2024.
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## **Advisory Board**

1. 2024- Medical advisory board of Allo Hope Foundation
2. 2023- Medical advisory for Inozyme Parma

## **Narrative Report**

### **Summary**

In 2022, I joined Boston Children's Hospital / Harvard Medical School as a Professor of Surgery/Obstetrics and gynecology with expertise in both fetal intervention and maternal-fetal medicine. Currently, I am the Chief of Division Fetal and Surgery Medicine, Director of Maternal Fetal Care Center and Director of Maternal Fetal Medicine at Boston Children's Hospital. I have been involved in clinical, research and educational activities at both national and international levels and hold leadership positions, which reflect this expertise. I regularly receive invitations to speak to professional and lay audiences on high-risk pregnancies and fetal interventions in the United States and other countries. I have published 198 peer reviewed research investigations and 80 other peer-reviewed articles on which I serve as first author on more than 50 and senior author on more than 80. In addition, I provide diagnoses and treatment for complex high risk gestations with challenging fetal conditions referred to us by my colleagues around the country. The above clinical experience and scientific contributions lead to the positions that I held as Professor (tenured) in the Department of Obstetrics & Gynecology at Baylor College of Medicine with adjunct appointments in the Department of Surgery and Neurosurgery at Baylor College of Medicine, the Department of Obstetrics & Gynecology at Stanford University Medical Center, honorary visiting professor in the Department of Obstetrics & Gynecology at Shiraz University of Medical Sciences and distinguished visiting professor in the Department of Obstetrics & Gynecology at Tehran University of Medical Sciences. I served as Chief of Fetal Therapy and Surgery Division; Co-Chair of the Fetal Center Steering committee at Texas Children's Hospital, Co-Director of the Perinatal Surgery Fellowship and Co-Director of the Maternal Fetal Surgery Program in the Department of Obstetrics & Gynecology at Baylor College of Medicine until I move to Boston Children's Hospital and Harvard Medical School.

Since assuming the role of Chief of the Division of Maternal-Fetal Medicine and Surgery and Director of the Maternal Fetal Care Center (MFCC) at Boston Children's Hospital in 2022, I have spearheaded significant growth and innovation within the center. Patient referrals have increased by over 50%, rising from 800 to more than 1,200 annually, while the number of fetal ultrasounds has doubled to over 1,600 per year. I have expanded our staff by more than 50%, ensuring that we can offer all recognized fetal surgeries worldwide. Under my leadership, we have performed over 100 successful and complex fetal surgical interventions, positioning our center at the forefront of global maternal-fetal care.

Moreover, I established a pioneering fetal surgery fellowship program and successfully recruited two new fellows to advance our surgical and clinical expertise. Our referral network has grown beyond the Northeast, now extending into upper New York State and other regions. My research initiatives have focused on innovative fetal interventions, including groundbreaking studies on congenital hydrocephalus and vasa Previa, as well as the exploration of mesenchymal stem cells for treating fetal anomalies. These efforts have solidified the MFCC's reputation as a global leader in maternal-fetal medicine and surgery.

### **Area of Excellence: Clinical Expertise and Innovation**

My clinical interests and expertise focus on providing care for complex high-risk pregnancies and the practice of fetal intervention. In the past decade, I have been actively involved in clinical work,

providing and innovating treatment for high-risk pregnancies and various fetal disorders; I receive referrals from different centers locally, regionally, nationally, and internationally. My clinical practice is focused on two niche areas, which are fetal surgery (*in utero* evaluation and repair of complicated fetal structural anomalies) and management of abnormally adherent placenta. I am particularly well known for my unique clinical expertise in fetal intervention. I am frequently consulted by physicians and patients throughout the United States and internationally regarding the management of these diseases. I was one of the leaders in the development of the Maternal Fetal Surgery Program at the Baylor College of Medicine which performs the complex maternal surgeries for the placenta accreta spectrum. In this role, I have performed more than 300 cases of cesarean hysterectomy for this complication of pregnancy and more than 1,000 fetal surgery procedures. My expertise has been recognized by my appointment to the Scientific Committee of the International Fetal Medicine and Surgery Society (IFMSS) and Chair of Steering Committee (2024-2027), the Education/Research/Global Health Committee of the Society of Maternal-Fetal Medicine (SMFM) and Vice Chair of Educational Committee (2023-2026), the International Society for Prenatal Diagnosis (ISPD) as a membership director and Board Member (2024-2027), Steering/Publication Committee for PRIORITY (Pregnancy CoRonavirus Outcomes RegIsTrY), Early Career Committee for the Society for Reproductive Investigation (SRI), Board Member of World Association of Perinatal Medicine (WAMP); Founder of Pan-American Society for Placenta Accreta Spectrum (PAS2) and Chair of Scientific Committee of PAS2; and the Education/Finance/Ethics Committee for the North American Fetal Therapy Network (NAFTNet). I have gained unique clinical experience in the past twelve years working as a fetal surgery attending physician in our clinically active program which has led to me receiving multiple prestigious awards from the Baylor College of Medicine including the “Early Career Faculty Award for Excellence in Patient Care in 2017”, the “Star Award for Excellence in Patient Care in 2020”, the “Faculty Alpha Omega Alpha (AOA) in 2020”, “Research Mentor of the Year at Baylor College of Medicine in 2021” and from the University of Iowa Health Care “Distinguished Alumnus Award for Early Achievement in 2022”.

Most of my publications focus on high-risk fetal conditions and interventions. More than 80 of those papers were in the past three years and during that time interval, I have edited one textbook, and eight book chapters. I also have shared my expertise and knowledge on a national and international level by participating in more than 20 educational courses and presenting over 30 lectures. I have published chapters for five of the most popular and recognized textbooks in obstetrics and gynecology in the past three years. My articles have been published in high impact peer-reviewed journals, including Lancet, JAMA, NEJM, Journal of American College of Cardiology, Obstetrics & Gynecology, American Journal of Obstetrics & Gynecology and Journal of Ultrasound in Obstetrics and Gynecology. I have also served as a reviewer for more than 15 journals, including Obstetrics & Gynecology, American Journal of Obstetrics & Gynecology and Journal of Ultrasound in Obstetrics and Gynecology.

I have promoted the development of fetal surgery in North American and worldwide. I mentored the development of fetal surgery centers at Stanford School of Medicine and the East Virginia School of Medicine where I hold adjunct faculty appointments. I also fostered similar developments at the Tehran University of Medical Sciences (TUMS), Tehran and the Shiraz University of Medical Sciences (SUMS), Shiraz, Iran. In Iran I performed the first open neural tube defect (NTD) repair in 2013, the first laser ablation for Twin to Twin Transfusion Syndrome (TTTS) in 2017, the first fetoscopic repair of NTD in 2018 and the first fetoscopic endoluminal tracheal occlusion also in 2018. Between 2019 and 2021. I performed the first fetoscopic NTD repairs in Israel, South Africa, Argentina, and at the University of Southern California.

In my current role as Director of the Maternal Fetal Care Center at Boston Children's Hospital, my research primarily focuses on three key domains:

- **Innovative Fetal Intervention:** My research team is pioneering new surgical techniques for treating congenital hydrocephalus and vasa previa, notably through the FLUMEN study. These efforts aim to refine and enhance fetal surgical outcomes.
- **Innovative Medical Therapies:** I have initiated two groundbreaking projects at Boston Children's Hospital. The first examines the efficacy of Sirolimus in treating congenital cervicofacial malformations (MaterPons study), and the second focuses on assessing Valacyclovir's effectiveness in treating congenital CMV infections. These studies are crucial for developing targeted therapies that can improve prenatal treatment options.
- **Mesenchymal Stem Cells:** My team is at the forefront of investigating the potential of mesenchymal stem cells (MSCs) in treating fetal anomalies. Our research is exploring how MSCs can be used in regenerative medicine, particularly for their therapeutic potential in addressing complex congenital conditions.

Additionally, I serve as a consultant for the fetal centers at Oregon Health & Science University (OHSU) and Indiana University Health (IU), where I provide expertise in advancing fetal medicine and surgery practices.

### **Teaching, Education and Administration**

Teaching plays a crucial role in my academic life. I have mentored several medical students, postdoc research fellows, residents and clinical fellows; most of them have subsequently assumed clinical and academic leadership positions. I have trained international physicians to perform fetal interventions in their home countries. As testimony to this, I received “Resident Research Award for Mentor of the Year at Baylor College of Medicine in 2017 and 2019” and “Norton Rose Fulbright Faculty Excellence Award-Category of Development of Enduring Educational Materials at Baylor College of Medicine in 2020”.

I routinely supervise resident or clinical fellows’ projects that result in meeting abstracts or peer-reviewed papers as demonstrated in this CV. I served as Co-Director of the Perinatal Surgery Fellowship within the Department of Obstetrics & Gynecology at Baylor College of Medicine, which is the only program in the nation to train the next generation of fetal surgeons. This fellowship accepts the fellows from pediatric surgery or maternal fetal medicine. Five fetal surgeons I trained are currently leading fetal intervention centers in the United States. I plan to continue these educational efforts at Harvard Medical School.

In addition, I enjoyed serving in administrative leadership positions, including my crucial role as Co-Chair of the Fetal Center Steering Committee at Baylor College of Medicine. This role involved leading a team of 36 specialists in fetal intervention: pediatric surgeon, maternal fetal medicine, general obstetrics, neurosurgery, neurology, pediatric cardiology, cardiac intervention, fetal radiology, intervention radiology, prenatal genetics, pediatric genetics, fetal anesthesia, pediatric nephrology, pediatric cardio-thoracic surgeon, pediatric urology, pediatric plastic surgeon, development pediatrics, ethics, quality improvement, research, IT and nursing and administrative leadership. I have lead the development of care management pathways and coordination of the multidisciplinary care teams (often including half a dozen subspecialties) for these complicated fetal and maternal cases.

In my current role as Director of the Maternal Fetal Care Center at Boston Children's Hospital and Professor of Surgery at Harvard Medical School, I established the first-ever fetal surgery fellowship program at our institution. This program was designed to provide rigorous training in advanced fetal surgical techniques, including both open and minimally invasive procedures. In its inaugural year, I successfully recruited two highly qualified fellows who are now engaged in hands-on surgical training, research projects, and multidisciplinary collaboration within our state-of-the-art facilities. This

fellowship aims to address the growing need for specialized fetal surgeons capable of handling complex congenital conditions, thereby advancing both clinical practice and research in the field of maternal-fetal medicine