

## **CURRICULUM VITAE**

### **MARK ROBERT BUSH, MD, FACOG, FACS**

1/1/19

Managing Partner and Medical Director of Conceptions for the past 14 years, Dr. Bush was instrumental in building one of the premier IVF centers in the United States. On the ground floor in 2009 utilizing embryo screening prior to transfer, Conceptions has typically maintained a > 70% live birth rate with one embryo transferred. First to credit his lab and colleagues, Dr. Bush strives to keep Conceptions warm and inclusive while at the same time cutting edge. He brings competence, integrity and a personal approach to fertility care, whether it involves more natural therapies, surgery, or advanced technologies.

#### **PERSONAL**

Date of birth

July 4, 1962, San Mateo, California

Wife & children

Christine S. Bush, married 31 years

Cameron Michael, 25

Alexis Victoria, 23

#### **OFFICES**

Conceptions Reproductive Associates (Center)

271 West County Line Road

Littleton, CO 80129

(303) 794-0045

Conceptions Reproductive Associates

Evergreen Building, Sky Ridge Medical Center

10107 RidgeGate Parkway, Suite 300

Lone Tree, CO 80124

(303) 586-6598

## **EDUCATION**

B.A. in Biology  
May 1985, University of California, Berkeley  
Berkeley, California

M.D.  
May 1991, Georgetown University School of Medicine  
Washington, D.C.

## **PROFESSIONAL TRAINING**

July 1991 to June 1995  
Resident in Obstetrics and Gynecology, William Beaumont AMC  
El Paso, Texas

July 1995 to June 1998  
Fellowship in Reproductive Endocrinology and Infertility, Duke University Medical  
Center, Durham, North Carolina

## **CURRENT PROFESSIONAL**

June 2004 to present  
Owner and Medical Director,  
Conceptions Reproductive Associates, Inc.  
Littleton (Center), Lone Tree, Lafayette and Denver, Colorado

## **ACADEMIC APPOINTMENTS**

Director, Walter Reed Reproductive Endocrinology and Infertility Division  
Department of Obstetrics and Gynecology  
Walter Reed AMC, Washington, DC, 20307  
July 1, 2001 - April 30, 2004

Associate Professor, Department of Obstetrics and Gynecology, F. Edward Hebert  
School of Medicine, Bethesda, Maryland, 20814  
August 5, 2003 - June 30, 2004

Director, Madigan Reproductive Endocrinology and Infertility Division  
Department of Obstetrics and Gynecology  
Madigan AMC, Tacoma, WA 98431  
July 1998 to June 2001

Clinical Assistant Professor, Department of Obstetrics and Gynecology  
University of Washington School of Medicine, Seattle, WA 98105  
January 1, 1999 to June 30, 2001

Guest Researcher, Laboratory of Molecular Carcinogenesis, National Institute

of Environmental Health Sciences, National Institutes of Health,  
Research Triangle Park, North Carolina, June 1, 1997 to June 30, 1998

Attending Faculty, Department of Obstetrics and Gynecology, Duke University  
Medical Center, July 1995 to June 1998

Associate, Division of Reproductive Endocrinology and Infertility, Department of  
Obstetrics and Gynecology, Duke University Medical Center, July 1995 to June 1998

Attending Faculty, Women's Health Center, Durham Veterans Administration Medical  
Center, Durham, North Carolina, July 1995 to June 1998

## **CERTIFICATIONS**

Advanced Cardiac Life Support (ACLS), certificate current

Fellow, American College of Surgeons, effective October 16, 2005

Diplomate of the American Board of Obstetrics and Gynecology, Subspecialty  
Certification in Reproductive Endocrinology and Infertility, effective April 23, 2001  
through December 31, 2009. Recertification current.

Fellow, American College of Obstetricians and Gynecologists, effective September 30,  
2000

Diplomate of the American Board of Obstetrics and Gynecology, effective November 12,  
1999 through December 31, 2009. Recertification current.

Passed, Oral Boards of the American Board of Obstetrics and Gynecology Subspecialty  
Examination in Reproductive Endocrinology and Infertility, April 23, 2001

Passed, Oral Boards of the American Board of Obstetrics and Gynecology Principal  
Examination in Obstetrics and Gynecology, November 12, 1999

Passed, Written Boards of the American Board of Obstetrics and Gynecology  
Subspecialty Examination in Reproductive Endocrinology and Infertility, June 28, 1999

Passed, Written Boards of the American Board of Obstetrics and Gynecology Principal  
Examination in Obstetrics and Gynecology, June 26, 1995

Diplomate of the National Board of Medical Examiners, #397059, July 1, 1992

## **PROFESSIONAL SOCIETY MEMBERSHIPS**

Member, Boulder County Medical Society

Member, Denver Medical Society  
 Member, Colorado Medical Society  
 Member, Society for Gynecologic Investigation  
 Member, Pacific Coast Reproductive Society  
 Member, The Society for Reproductive Endocrinology & Infertility, Inc.  
 Member, American Association of Gynecologic Laparoscopists  
 Member, American Medical Association  
 Member, The American Society for Reproductive Medicine  
 Member, The Society of Reproductive Surgeons  
 Fellow, The American College of Surgeons  
 Fellow, The American College of Obstetricians and Gynecologists

## **LICENSURE**

Colorado, #DR 42370

## **AWARDS**

The Joyce M. Vargas M.D. Visionary Award, as presented at The American Fertility Association Illuminations, Denver, Colorado, March 4, 2011

Physician's Recognition Award, American Medical Association, twelve consecutive years, 2003 to present

Patient's Choice Award, Vitals.com, 2012, 2013, 2014

The American College of Obstetricians & Gynecologists (ACOG) Council on Resident Education in Obstetrics and Gynecology (CREOG) National Faculty Award for Excellence in Resident Education, June 2001

Fourth Annual Parke-Davis Resident Educational Program Winner, as presented at the American College of American College of Obstetricians and Gynecologists Annual Clinical Meeting 1999, Philadelphia, PA, for Burney RO and Bush MR: A model for direct steroidogenic effects of troglitazone on the ovary

First Place, Fellows, Resident's Day, Duke University Medical Center, June 3, 1998, for Bush MR, Mele JM, Couchman GM, Walmer DK: Evidence of juxtacrine signaling for transforming growth factor alpha in human endometrium

Best Scientific Paper on Reproductive Endocrinology Award at the 35<sup>th</sup> Annual District Clinical Meeting of the American College of Obstetricians and Gynecologists, Nashville, Tennessee, October 1996 for Bush MR, Walmer DK, Bachus KE, Haney AF, Bossert NL, Couchman GM: The number of motile sperm after swim-up predicts fertilization in IVF cycles

Outstanding Scientific Paper Award at the 32<sup>nd</sup> Annual District Clinical Meeting of the American College of Obstetricians and Gynecologists, Seattle, Washington, November

1993 for Bush MR, Rosa C: Azithromycin and erythromycin in the treatment of cervical chlamydial infection during pregnancy

Biographical Listing in Marquis Who's Who in America, 54<sup>th</sup> edition, 2000

Biographical Listing in Marquis Who's Who in America, Who's Who in the South and Southwest, 26<sup>th</sup> edition, 1999-2000

Top 10% nationally on three sittings of the yearly Council on Resident Education in Obstetrics and Gynecology (CREOG) examination, including 97<sup>th</sup> percentile overall score as a senior obstetrics and gynecology resident

Best Teaching Resident, Department of Obstetrics and Gynecology, 1993-1994

At the University of California, Berkeley, graduated with High Honors, performed Honors research in cellular regulation, a member of Phi Beta Kappa and a member of the Mortar Board National Honor Society

#### **SELECTED PRESENTATIONS**

##### **The Midwest Reproductive Symposium, Chicago, IL, June 2010**

IVF Protocols: Hyper & Hypo-Responders, Implantation

Mark R. Bush, MD, Oral Presentation

and

Optimizing IVF Protocols

Mark R. Bush, MD, Postgraduate Workshop

##### **Impact of IVF Protocol Selection**

Invited lectures given in 2009 in Las Vegas, NV, Birmingham, AL, Ft. Lauderdale, FL, Boston, MA, La Jolla, CA, Honolulu, HI, and Los Angeles, CA.

##### **33<sup>rd</sup> National Primary Care Practitioner Symposium, Keystone, CO, July 2008**

Fertility Care Update for Nurse Practitioners

Mark R. Bush, MD, FACOG, FACS, Oral Presentation

##### **The American Society for Reproductive Medicine Annual Meeting, Washington, DC, October 2007**

**Selective cut-back protocol for in-vitro fertilization (IVF) ovarian stimulation in patients with polycystic ovary syndrome (PCOS)**

M.R. Bush, Poster Presentation

##### **Pacific Coast Reproductive Society 2006 Annual Meeting Program and Postgraduate Courses Page**

LH Activity: When and How Much?

Mark Bush, MD, Oral Presentation  
*Fertility and Sterility*  
 April 2006 (Vol. 85, Page S3)

#### PEER REVIEWED PUBLICATIONS

1. **Pregnancy outcomes from more than 1,800 in vitro fertilization cycles with the use of 24-chromosome single-nucleotide polymorphism-based preimplantation genetic testing for aneuploidy**  
 A.Simon, M.Kiehl, E.Fischer, J.Proctor, M. Bush, C.Givens, M.Rabinowitz, Z.Demko  
*Fertility and Sterility*  
 In Press
2. **Analyses of 37,000+ Embryos with 24-Chromosome Single-Nucleotide Polymorphism (SNP)-Based Preimplantation Genetic Screening (PGS)**  
 Rabinowitz M, McCoy RC, Demko Z, Simon AL, Ryan A, Kiehl MPetrov DA, Givens C, Fisher E, Proctor G, Bush M  
*Fertility and Sterility*  
 September 2015, Vol 104, Issue 3, e283
3. **IVF Clinical Outcomes With 24-Chromosome Aneuploidy Testing Using Informatics-Enhanced SNP Micorarrays**  
 M.Rabinowitz, A.Beltsos, D.Potter, M. Bush, C.Givens, D.Smotrich  
*Fertility and Sterility*  
 March 2011, Vol 95, Issue4, S12
4. **Progesterone Supplementation for Luteal Support: Efficacy and Patient Experiences With Vaginal Inserts (Endometrin) Versus Intramuscular Injection**  
 K. Doody, M.Bush, M.Collins  
*Fertility and Sterility*  
 March 2012, Vol 97, Issue 3, S18
5. **Efficacy of vaginal progesterone inserts (Endometrin) compared to intramuscular progesterone in oil for luteal support in PCOS patients**  
 A. Beltsos, M. Sanchez, K. Doody, M. Bush, J. Scobey  
*Fertility and Sterility*  
 September 2011, Vol 96, Issue 3, S130
6. **Aneuploidy rates of embryos derived from fresh donor egg cycle vs frozen donor egg cycles**  
 S.R. Kirkpatrick, G. Proctor, M. Wilson, H. Huffman, M. Bush  
*Fertility and Sterility*  
 September 2016, Vol 106, Issue 3, e308-e309
7. **Patients' Administration Preferences: Progesterone Vaginal Insert (Endometrin®) Compared to Intramuscular Progesterone for Luteal Phase Support**  
 Beltsos AN, Sanchez MD, Doody KJ, Bush MR, Domar AD, Collins MG  
*Reprod Health*  
 November 2014 (11(1): 78)
8. **Effects of Advanced Maternal Age are Abrogated in 122 Patients Undergoing Transfer of Embryos with Euploid Microarray Screening Results at Cleavage Stage**

M. Rabinowitz, A. Beltsos, D. Potter, M. Bush, C. Givens, D. Smotrich  
*Fertility and Sterility*  
 September 2010 (Vol. 94, Issue 4, Page S80)

9. **Efficacy of Vaginal Progesterone Inserts (Endometrin) Compared to Intramuscular Progesterone in Oil for Luteal Support in IVF Patients**  
 C.E. Miller, K.J. Doody, E. Zbella, B.Webster, M.R. Bush, J. Scobey  
*Fertility and Sterility*  
 September 2010 (Vol. 94, Issue 4, Page S20)
10. **Menopur® versus rFSH in GnRH antagonist cycles**  
 C.E. Miller, E. Zbella, B.W. Webster, K.J. Doody, M.R. Bush, S.F. Dorfman  
*Fertility and Sterility*  
 September 2009 (Vol. 92, Issue 3, Page S150)
11. **Selective cut-back protocol for in-vitro fertilization (IVF) ovarian stimulation in patients with polycystic ovary syndrome (PCOS)**  
 M.R. Bush, M.S. Swanson, S. Stephan  
*Fertility and Sterility*  
 September 2007 (Vol. 88, Page S293)
12. **Pacific Coast Reproductive Society 2006 Annual Meeting Program and Postgraduate Courses Page**  
 LH Activity: When and How Much?  
 Mark Bush, MD  
*Fertility and Sterility*  
 April 2006 (Vol. 85, Page S3)
13. **Treatment with gonadotropin-releasing hormone (GnRH) antagonists in women suppressed with GnRH agonist may avoid cycle cancellation in patients at risk for ovarian hyperstimulation syndrome**  
 Robert L. Gustofson, Frederick W. Larsen, Mark R. Bush, James H. Segars  
*Fertility and Sterility*  
 January 2006 (Vol. 85, Issue 1, Pages 251-254)
14. **The novel use of ganirelix to rescue hyperresponding stimulation cycles from cancellation in patients treated with microdose lupron**  
 R.L. Gustofson, M.R. Bush, J.H. Segars, F.W. Larsen  
*Fertility and Sterility*  
 September 2004 (Vol. 82, Pages S32-S33)
15. **The role of fallopian tube anastomosis in training fellows: A survey of current reproductive endocrinology fellows and practitioners**  
 Alicia Armstrong, Adrienne B Neithardt, Ruben Alvero, Fady I Sharara, Mark Bush, James Segars  
*Fertility and Sterility*  
 August 2004 (Vol. 82, Issue 2, Pages 495-497)
16. **Estradiol-induced degradation of uterine insulin receptor substrate-2: Requirement for an IGF-I stimulated, proteosome-dependant pathway.**  
 Richards RG, Klotz DM, Bush MR, Walmer DK, DiAugustine RP:  
*Endocrinology*.  
 2001; 142 (9): 3842 – 3849.

17. **Evidence of juxtacrine signaling for transforming growth factor alpha in human endometrium.**  
 Bush MR, Mele JM, Couchman GM, Walmer DK  
*Biology of Reproduction.*  
 1998; 59: 1522-1529.
  
18. **Evaluation of the postcoital test in cycles involving exogenous gonadotropins.**  
 Bush MR, Walmer DK, Couchman GM, Haney AF  
*Obstetrics and Gynecology.*  
 1997; 89: 780-784.
  
19. **Azithromycin and erythromycin in the treatment of cervical chlamydial infection during pregnancy.**  
 Bush MR, Rosa C  
*Obstetrics and Gynecology.*  
 1994; 84: 61-63.
  
20. **Postoperative bilateral parotitis requiring endotracheal intubation after gynecologic surgery**  
 Bush MR, Soisson AP  
*Hospital Physician*  
 1997; 33: 52-54.
  
21. **Hematosalpinx with pelvic pain after endometrial ablation confirms the postablation-tubal sterilization syndrome**  
 Webb JC, Bush MR, Wood MD, Park GS  
*Journal of the American Association of Gynecologic Laparoscopists*  
 1996; 3: 419-421.
  
22. **Characterization of antigen receptor response elements within the interleukin-2 enhancer**  
 Durand DB, Shaw JP, Bush MR, Replogle RE, Belagage R, Crabtree GR  
*Journal of Molecular and Cellular Biology*  
 1988; 8: 1715 -1724.
  
23. **A 275 basepair fragment at the 5' end of the interleukin-2 gene enhances expression from a heterologous promoter in response to signals from the T cell antigen receptor.** Durand DB, Bush MR, Morgan JG, Weiss A, Crabtree GR  
*Journal of Experimental Medicine*  
 1987; 165: 395-407.

#### **ABSTRACTS/PRESENTATIONS**

Proctor, J. Glenn, Wilson, J. Michael, Swanson, Michael S, Bush, Mark R: 24 Chromosome Aneuploidy Screening and FET Allows for High Pregnancy Rates and the Opportunity for Elective Single Embryo Transfer. Oral presentation, AAB Meeting, Las Vegas, May 2014.

M. Rabinowitz, A. Beltsos, D. Potter, M. Bush, C. Givens, D. Smotrich: Effects of Advanced Maternal Age are Abrogated in 122 Patients Undergoing Transfer of Embryos with Euploid Microarray Screening Results at Cleavage Stage. Oral presentation, 66th



Annual Clinical Meeting of the American Society of Reproductive Medicine, Denver, Colorado, October 2010.

C.E. Miller, K.J. Doody, E. Zbella, B.Webster, M.R. Bush, J. Scobey: Efficacy of Vaginal Progesterone Inserts (Endometrin) Compared to Intramuscular Progesterone in Oil for Luteal Support in IVF Patients. Oral presentation, 66th Annual Clinical Meeting of the American Society of Reproductive Medicine, Denver, Colorado, October 2010.

D.S. Johnson, K. Ditmore, C. Khoury, D. Potter, R. Ross, D. Smotrich, S. Thormahlen, M. Bush, M. Rabinowitz: Mechanism of Aneuploidy is Predictive of Embryo Viability. Poster presentation, 65th Annual Clinical Meeting of the American Society of Reproductive Medicine, Atlanta, GA, October 2009.

C.E. Miller, E. Zbella, B.W. Webster, K.J. Doody, M.R. Bush, S.F. Dorfman: Menopur® versus rFSH in GnRH antagonist cycles. Poster presentation and Book of Abstracts, 65th Annual Clinical Meeting of the American Society of Reproductive Medicine, Atlanta, GA, October 2009.

Bush MR, Swanson MS, Stephan S, Albrecht BH: Selective Cut-Back Protocol for In-Vitro Fertilization (IVF) Ovarian Stimulation in Patients with Polycystic Ovary Syndrome (PCOS). Poster presentation and Book of Abstracts, 63<sup>rd</sup> Annual Clinical Meeting of the American Society of Reproductive Medicine, Washington DC, October 2007.

Bush MR: LH Activity: When and How Much? Oral presentation, Pacific Coast Reproductive Society Annual Meeting, Palm Springs, CA, April 2006.

Gustofson RL, Bush MR, Segars JH, Larsen FW: The novel use of ganirelix to rescue hyperresponding stimulation cycles from cancellation in patients treated with microdose lupron. Oral presentation and Book of Abstracts, 60<sup>th</sup> Annual Clinical Meeting of the American Society of Reproductive Medicine, Philadelphia, Pennsylvania, October 2004.

Parker JD, Bush MR, Hibbert ML: Premature ovarian failure in a patient with a balanced chromosomal translocation. Oral presentation and Book of Abstracts, 39<sup>th</sup> Annual District Clinical Meeting of the American College of Obstetricians and Gynecologists, Norfolk, Virginia, October 2001.

Burney RO, Hibbert M, Bush MR: Thiazolidinediones in the management of insulin resistant polycystic ovary syndrome. Oral presentation and Book of Abstracts, 39<sup>th</sup> Annual District Clinical Meeting of the American College of Obstetricians and Gynecologists, Cincinnati, Ohio, October 2000.

Burney RO, Bush MR, Brizuela M, Ma W, Hibbert M: Laparoscopic trocar insertion at the left upper quadrant: a case series and description of technique. Oral presentation, video, and Book of Abstracts, 39<sup>th</sup> Annual District Clinical Meeting of the American College of Obstetricians and Gynecologists, Cincinnati, Ohio, October 2000.

Brizuela M, Bush MR, Perez RP, Hibbert M: Acute pelvic pain at time of menarche: a syndrome of uterus didelphys, obstructed hemivagina, and ipsilateral renal agenesis.

Oral presentation and Book of Abstracts, 39<sup>th</sup> Annual District Clinical Meeting of the American College of Obstetricians and Gynecologists, Cincinnati, Ohio, October 2000.

Dainty LA, Carlson JW, Nielsen P, Bush MR: Gestational trophoblastic disease after an uncomplicated term spontaneous vaginal delivery: a case report. Oral presentation and Book of Abstracts, 39<sup>th</sup> Annual District Clinical Meeting of the American College of Obstetricians and Gynecologists, Cincinnati, Ohio, October 2000.

Burney RO and Bush MR: A model for direct steroidogenic effects of troglitazone on the ovary. Fourth Annual Parke-Davis Resident Educational Program Winner, American College of American College of Obstetricians and Gynecologists Annual Clinical Meeting 1999, Philadelphia, PA.

Burney RO and Bush MR: Colon cancer presenting in pregnancy. Oral presentation and Book of Abstracts, 38<sup>th</sup> Annual District Clinical Meeting of the American College of Obstetricians and Gynecologists, San Antonio, Texas, October 1999.

Bush MR, Mele JM, Couchman GM, Walmer DK: Evidence of juxtacrine signaling for transforming growth factor alpha in human endometrium. Oral presentation and Book of Abstracts, 45<sup>th</sup> Annual Meeting of the Society for Gynecologic Investigation, Atlanta, Georgia, March 1998.

Bush MR, Mele JM, Couchman GM, Walmer DK: Evidence of juxtacrine signaling for transforming growth factor alpha in human endometrium. First Place, Fellow category, Oral presentation and Book of Abstracts, Resident's Day, Duke University Medical Center, Durham, NC, June 1998.

Bush MR, Walmer DK, Couchman GM, Haney AF: Evaluation of the postcoital test in cycles involving exogenous gonadotropins. Oral presentation and Book of Abstracts, 35<sup>th</sup> Annual District Clinical Meeting of the American College of Obstetricians and Gynecologists, Nashville, Tennessee, October 1996.

Bush MR, Walmer DK, Bachus KE, Haney AF, Bossert NL, Couchman GM: The number of motile sperm after swim-up predicts fertilization in IVF cycles. Oral presentation and Book of Abstracts, 35<sup>th</sup> Annual District Clinical Meeting of the American College of Obstetricians and Gynecologists, Nashville, Tennessee, October 1996.

Bush MR, Soisson AP: Postoperative bilateral parotitis requiring endotracheal intubation after gynecologic surgery. Poster presentation and Book of Abstracts at the 33<sup>rd</sup> Annual District Clinical Meeting of the American College of Obstetricians and Gynecologists, Reno, Nevada, November 1994.

Bush MR, Rosa C: Azithromycin and erythromycin in the treatment of cervical chlamydial infection during pregnancy. Georgetown University Medical Center, Department of Obstetrics and Gynecology, July 1994.

Bush MR, Rosa C: Azithromycin and erythromycin in the treatment of cervical chlamydial infection during pregnancy. Oral presentation and Book of Abstracts, 32<sup>nd</sup>

Annual District Clinical Meeting of the American College of Obstetricians and Gynecologists, Seattle, Washington, November 1993.