Stanford



Mary Polan

Katharine Dexter McCormick and Stanley McCormick Memorial Professor in the School of Medicine, Emerita

Obstetrics & Gynecology

Bio

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Obstetrics & Gynecology
- Member, Bio-X

ADMINISTRATIVE APPOINTMENTS

- Chair, Stanford University School of Medicine - Obstetrics & Gynecology, (1999- present)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Dr. Polan's research has centered around ovarian function during both the follicular and luteal phases. Studies of steroidogenesis, LH receptor synthesis, and the involvement of the plasminogen activator system in ovarian events have been performed. In addition, this laboratory has investigated the synthesis and secretion of interleukin-1 by human peripheral monocytes as well as by human granulosa-luteal cells isolated from IVF patients. More recently this laboratory has focused on the role of IL-1, IL-1ra, and IL-1 type 1 receptor, as well as collagenase and TIMPs, in the process of embryonic implantation. Studies with IL-1 receptor antagonist have documented its ability to prevent implantation in the mouse model.

Publications

PUBLICATIONS

- **Transforming growth interacting factor expression in leiomyoma compared with myometrium** *FERTILITY AND STERILITY*
  Yen-Ping, J., Man, W. C., Wen, Y., Polan, M. L., Ho, E. S., Chen, B.
  2010; 94 (3): 1078-1083
- **The role of counseling for obstetric fistula patients: Lessons learned from Eritrea** *PATIENT EDUCATION AND COUNSELING*
  Johnson, K. A., Turan, J. M., Hailemariam, L., Mengsteab, E., Jena, D., Polan, M. L.
  2010; 80 (2): 262-265
- **Is lysyl oxidase-like protein-1, alpha-1 antitrypsin, and neutrophil elastase site specific in pelvic organ prolapse?** *INTERNATIONAL UROGYNECOLOGY JOURNAL*
  Man, W. C., Ho, J. Y., Wen, Y., Sokol, E. R., Polan, M. L., Chen, B.
  2009; 20 (12): 1423-1429
- **Relaxin increases elastase activity and protease inhibitors in smooth muscle cells from the myometrium compared with cells from leiomyomas** *FERTILITY AND STERILITY*
  Chen, B., Wen, Y., Yu, X. Y., Polan, M. L.
  2009; 91 (4): 1351-1354

- **Effect of relaxin on TGF-beta 1 expression in cultured vaginal fibroblasts from women with stress urinary incontinence** *REPRODUCTIVE SCIENCES*
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  2008; 15 (3): 312-320
- **Is alpha 2-macroglobulin important in female stress urinary incontinence?** *HUMAN REPRODUCTION*
  Wen, Y., Man, W. C., Sokol, E. R., Polan, M. L., Chen, B. H.
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- **Expression of CD9 in frozen-thawed mouse oocytes: preliminary experience** *FERTILITY AND STERILITY*
  Wen, Y., Quintero, R., Chen, B., Shu, Y., Polan, M. L., Behr, B.
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- **Differences in mRNA and protein expression of small proteoglycans in vaginal wall tissue from women with and without stress urinary incontinence** *HUMAN REPRODUCTION*
  Wen, Y., Zhao, Y. Y., Li, S., Polan, M. L., Chen, B. H.
  2007; 22 (6): 1718-1724
- **Increased expression of latent TGF-beta binding protein-1 and fibrillin-1 in human uterine leiomyomata.** *Molecular human reproduction*
  Zhao, Y., Wen, Y., Polan, M. L., Qiao, J., Chen, B. H.
  2007; 13 (5): 343-349
- **Eritrean Women's Project response to wall paper: "Hard questions concerning fistula surgery in third world countries"** *JOURNAL OF WOMENS HEALTH*
  Husain, A., Polan, M. L., Morgan, M., Ghebrekidan, A.
  2007; 16 (2): 281-282
- **Experiences of women seeking medical care for obstetric fistula in Eritrea: implications for prevention, treatment, and social reintegration.** *Global public health*
  Turan, J. M., Johnson, K., Polan, M. L.
  2007; 2 (1): 64-77
- **The role of neutrophil elastase in elastin metabolism of pelvic tissues from women with stress urinary incontinence** *NEUROUROLOGY AND URODYNAMICS*
  Chen, B., Wen, Y., Yu, X., Polan, M. L.
  2007; 26 (2): 274-279
- **Do extracellular matrix protein expressions change with cyclic reproductive hormones in pelvic connective tissue from women with stress urinary incontinence?** *HUMAN REPRODUCTION*
  Wen, Y., Polan, M. L., Chen, B.
  2006; 21 (5): 1266-1273
- **Double-blind, placebo-controlled study of Fertilityblend: a nutritional supplement for improving fertility in women.** *Clinical and experimental obstetrics & gynecology*
  Westphal, L. M., Polan, M. L., Trant, A. S.
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- **Microarray analysis of differentially expressed genes in vaginal tissues from women with stress urinary incontinence compared with asymptomatic women** *HUMAN REPRODUCTION*
  Chen, B., Wen, Y., Zhang, Z. M., Guo, Y. Q., Warrington, J. A., Polan, M. L.
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- **Surgical management of complex obstetric fistula in Eritrea** *JOURNAL OF WOMENS HEALTH*
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- **Elastin metabolism in pelvic tissues: Is it modulated by reproductive hormones?** *Joint Annual Meeting of the American-Urogynecologic-Society/Society-of-Gynecologic-Surgeons*
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- **Preliminary experience with low concentration of granulocyte-macrophage colony-stimulating factor: A potential regulator in preimplantation mouse embryo development and apoptosis** *JOURNAL OF ASSISTED REPRODUCTION AND GENETICS*
  Behr, B., Mooney, S., Wen, Y., Pollan, M. L., Wang, H. B.
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- **Estrogen bioassay of ginseng extract and Arginmax((R)), a nutritional supplement for the enhancement of female sexual function** *JOURNAL OF WOMENS HEALTH*
  Polan, M. L., Hochberg, R. B., Trant, A. S., Wuh, H. C.
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- **A nutritional supplement for improving fertility in women - A pilot study** *JOURNAL OF REPRODUCTIVE MEDICINE*
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- **Career advancement for women faculty in a US school of medicine: Perceived needs** *ACADEMIC MEDICINE*
  McGuire, L. K., Bergen, M. R., Polan, M. L.
  2004; 79 (4): 319-325
- **Avoiding menstruation - A review of health and lifestyle issues** *JOURNAL OF REPRODUCTIVE MEDICINE*
  Henzl, M. R., Polan, M. L.
  2004; 49 (3): 162-174
- **Elastolytic activity in women with stress urinary incontinence and pelvic organ prolapse** *NEUROUROLOGY AND URODYNAMICS*
  Chen, B., Wen, Y., Polan, M. L.
  2004; 23 (2): 119-126
- **Female sexual arousal: a behavioral analysis** *FERTILITY AND STERILITY*
  Polan, M. L., Desmond, J. E., Banner, L. L., Pryor, M. R., McCallum, S. W., Atlas, S. W., Glover, G. H., Arnow, B. A.
  2003; 80 (6): 1480-1487
- **Matrix metalloproteinase and tissue inhibitor of matrix metal loproteinase expression in human preimplantation embryos** *FERTILITY AND STERILITY*
  Wang, H. B., Wen, Y., Mooney, S., Li, H., Behr, B., Polan, M. L.
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- **Distinctive proliferative phase differences in gene expression in human myometrium and leiomyomata** *FERTILITY AND STERILITY*
  Wang, H. B., Mahadevappa, M., Yamamoto, K., Wen, Y., Chen, B., Warrington, J. A., Polan, M. L.
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- **Bench to bedside: clinical opportunities for microarray analysis** *FERTILITY AND STERILITY*
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- **Differences in estrogen modulation of tissue inhibitor of matrix metalloproteinase-1 and matrix metalloproteinase-1 expression in cultured fibroblasts from continent and incontinent women** *23rd Annual Meeting of the American-Urogynecologic-Society*
  Chen, B., Wen, Y., Wang, H., Polan, M. L.
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- **Brain activation and sexual arousal in healthy, heterosexual males** *BRAIN*
  Arnow, B. A., Desmond, J. E., Banner, L. L., Glover, G. H., Solomon, A., Polan, M. L., Lue, T. F., Atlas, S. W.
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- **Collagen metabolism and turnover in women with stress urinary incontience and pelvic prolapse** *INTERNATIONAL UROGYNECOLOGY JOURNAL*
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- **Interleukin-1 beta regulates urokinase plasminogen activator (u-PA), u-PA receptor, soluble u-PA receptor, and plasminogen activator inhibitor-1 messenger ribonucleic acid expression in cultured human endometrial stromal cells** *46th Annual Meeting of the Society-for-Gynecologic-Investigation*
  Chung, H. W., Wen, Y., Ahn, J. J., Moon, H. S., Polan, M. L.
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- **Expression of vascular endothelial growth factor mRNA in human preimplantation embryos derived from tripronuclear zygotes** *15th Annual Conference of the European-Society-of-Human-Reproduction-and-Embryology*
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  ELSEVIER SCIENCE INC.2000: 1220–26

- **Is there a place for biochemical embryonic preimplantational screening?** *Ares-Serono Workshop on Human Implantation - Recent Advances & Clinical Aspects*
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- **The role of gonadotropin-releasing hormone in murine preimplantation embryonic development** *ENDOCRINOLOGY*
  Raga, F., Casan, E. M., Kruessel, J., Wen, Y., Bonilla-Musoles, F., Polan, M. L.
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  Casan, E. M., Raga, F., Polan, M. L.
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- **Independent regulation of matrix metalloproteinase-9, tissue inhibitor of metalloproteinase-1 (TIMP-1), and TIMP-3 in human endometrial stromal cells by gonadotropin-releasing hormone: Implications in early human implantation** *JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM*
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- **Cytokine-mediated regulation of 92-kilodalton type IV collagenase, tissue inhibitor of metalloproteinase-1 (TIMP-1), and TIMP-3 messenger ribonucleic acid expression in human endometrial stromal cells** *JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM*
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- **Interleukin-1 beta regulates vero cell interleukin-1 receptor type I messenger ribonucleic acid expression** *BIOLOGY OF REPRODUCTION*
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- **Different pattern of interleukin-1 beta-(IL-1 beta), interleukin-1 receptor antagonist-(IL-1ra) and interleukin-1 receptor type I-(IL-1R tI) mRNA-expression in single preimplantation mouse embryos at various developmental stages** *44th Annual Meeting of the Society-for-Gynecologic-Investigation*
  Kruessel, J. S., Huang, H. Y., Wen, Y., Kloodt, A. R., Bielfeld, P., Polan, M. L.
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- **INTERLEUKIN-1 SYSTEM IN THE MATERNO-TROPHOBLAST UNIT IN HUMAN IMPLANTATION - IMMUNOHISTOCHEMICAL EVIDENCE FOR AUTOCRINE/PARACRINE FUNCTION** *JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM*
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  Simon, C., Frances, A., Piquette, G. N., ELDANASOURI, I., Zurawski, G., Dang, W., Polan, M. L.
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