

Marla Lujan

Web Bio

Information

Biography

Biographical Statement

Marla Lujan received her Master of Science (2001) and Doctor of Philosophy (2005) in Physiology from Queen's University in Kingston, Ontario. She conducted her postdoctoral studies in Obstetrics, Gynecology and Reproductive Sciences at the University of Saskatchewan in Saskatoon, Saskatchewan from 2005 to 2008. She became an Assistant Professor of Human Nutrition in the Division of Nutritional Sciences at Cornell University in 2008.

The Lujan laboratory investigates the link between nutrition, metabolism and fertility in women. Specific interests include elucidating mechanisms that lead to amenorrhea (loss of regular menstrual cycles) in women as well as improving the diagnosis and treatment of polycystic ovary syndrome - a condition of impaired fertility that is tightly linked to insulin resistance and excess male hormone production. Her group uses high-resolution serial ovarian ultrasonography to characterize follicle development during natural cycles in women with variable reproductive potential and metabolic profiles across the lifespan. By understanding the physiological mechanisms governing amenorrhea, the goal of her laboratory is to develop nutritional, lifestyle and pharmaceutical regimens that promote and preserve reproductive health in women.

Teaching

Teaching and Advising Statement

My goals for teaching are to design and administer an introductory Human Anatomy and Physiology course that provides students with a working knowledge of the major organ systems through experiential learning. I am dedicated to developing and administering evaluation tools that fairly assess students on their knowledge of Human Anatomy and Physiology and challenge them to think more broadly about the application of knowledge in this discipline. Lastly, I strive to foster a classroom environment in which students trust and value their learning experience. As an advisor, my goals are to assist students in developing an educational program that is consistent with their career and personal goals. I work hard to provide accurate and timely information about programmatic requirements and to foster an environment in which students feel secure to discuss their interests, aptitudes and limitations.

Professional

Current Professional Activities

- Member, Cornell Graduate Field of Nutrition
- Member, Cornell Graduate Field of Molecular and Integrative Physiology
- Member, The Endocrine Society
- Member, Androgen Excess and PCOS (AE-PCOS) Society
- Member, American Society for Reproductive Medicine
- Member, Canadian Fertility and Andrology Society
- Member, Society for the Study of Reproduction
- Member, American Society for Nutrition

Research

Current Research Activities

Role of nutrition, metabolism and body composition in ovarian follicle development, ovulation and fertility in women; Ultrasonographic, endocrine and cellular markers of impaired fertility in anovulatory disorders; Development of diagnostic criteria for PCOS; Development of reliable methods for sonographic assessment of ovarian morphology; Assessments of baseline dietary intake and physical activity in women with PCOS; Development of lifestyle regimens that facilitate weight loss and stimulate ovulation in women;

Extension

Education

Education

- PhD 2005 - Queen's University, Physiology
- MSc 2001 - Queen's University, Physiology
- BSch 1998 - Queen's University, Life Sciences

Courses

Courses Taught

- NS 3420 Laboratory Studies for Human Anatomy & Physiology
- NS 4030 Undergraduate Teaching Apprenticeship
- NS 4010 Empirical Research
- BIOG 2990/4990 Independent Research

Websites

Related Websites

[Lujan Lab Website](#)

Administration

Publications

Selected Publications

Christ JP, Vanden Brink H, Brooks ED, Pierson RA, Chizen DR, **Lujan ME**. Ultrasonographic features of polycystic ovaries relate to degree of reproductive and metabolic disturbance in polycystic ovary syndrome. *Fertility and Sterility* 2015, Jan 6.[Epub ahead of print]

Lin Aw, Lujan ME. Comparison of dietary intake and physical activity between women with and without polycystic ovary syndrome: a review. *Advances in Nutrition* 2014; 5: 486-496.

Clark NM, Podolski AJ, Chizen DR, Pierson RA, Lehotay DC, Lujan ME. Prevalence of polycystic ovary syndrome (PCOS) phenotypes using updated criteria for polycystic ovarian morphology: an assessment of over 100 consecutive women self-reporting features of PCOS. *Reproductive Sciences* 2014; 21(8):1034-1043.

Dewailly D, Lujan ME, Carmina E, Cedars MI, Laven J, Norman RJ, Escobar Morreale HF. Definition and significance of polycystic ovarian morphology (PCOM): a task force report from the Androgen Excess and Polycystic Ovary Syndrome (AE-PCOS) Society. *Human Reproduction Update; Hum Reprod Update*. 2014;20(3):334-52.

Christ JP, Willis AD, Brooks ED, Vanden Brink H, Jarrett BY, Pierson RA, Chizen DR, Lujan ME. Follicle number, and not assessments of the ovarian stroma, represents the best ultrasonographic marker of polycystic ovary syndrome. *Fertility and Sterility* 2014; 101(1):280-287.

Lujan ME, Peppin AK, Brooks ED, Reines JK, Jarrett BY, Pierson RA, Muhn N, Haider E, Chizen DR. Revised ultrasound criteria for polycystic ovary syndrome: reliable thresholds for elevated follicle population and ovarian volume. *Human Reproduction* 2013; 28(5):1361-8.

Lujan ME, Podolski AJ, Chizen DR, Lehotay DC, Pierson RA. Digit ratios by computer-assisted analysis confirm lack of anatomical evidence of prenatal androgen exposure in clinical phenotypes of polycystic ovary syndrome. *Reproductive Biology and Endocrinology* 2010, 8:156.

Lujan ME, Kepley AL, Chizen DR, Pierson RA. Development of morphologically dominant follicles is associated with fewer metabolic disturbances in amenorrheic women with polycystic ovary syndrome. *Ultrasound in Obstetrics and Gynaecology* 2010, 36(6):759-66.

Lujan ME, Brooks ED, Kepley AL, Chizen DR, Pierson RA, Peppin AK. Grid analysis improves reliability in follicle counts made by ultrasonography in women with polycystic ovary syndrome. *Ultrasound in Medicine and Biology* 2010, 36(5):712-8.

Colwell MK, Lujan ME, Lawson KL, Pierson RA, Chizen DR. Surveying women's perceptions of PCOS following participation in a clinical research study: implications for knowledge, feelings, and daily health practices. *Journal of Obstetrics & Gynaecology Canada* 2010; 32(5):453-9.

Lujan ME, Bloski TG, Chizen DR, Lehotay D, Pierson RA. Digit ratios do not serve as anatomical evidence of prenatal androgen exposure in clinical phenotypes of polycystic ovary syndrome. *Human Reproduction* 2010, 25(1):204-211.

Lujan ME, Chizen DR, Peppin AK, Dhir A, Pierson RA. Assessment of ultrasonographic features of polycystic ovaries is associated with modest levels of inter-observer agreement. *Journal of Ovarian Research* 2009; 2:6.

Mircea CN, Lujan ME, Singh J, Adams GP, Jaiswal R, Pierson RA. Imaging ovarian follicles and corpora lutea in the mouse using ultrasound biomicroscopy: a validation study. *Reproduction, Fertility & Development* 2009, 21:579-86.

Allaway HC, Bloski TG, Pierson RA, Lujan ME. Digit ratios determined by computer-assisted analysis are more reliable than those using physical measurements, photocopies, and printed scans. *American Journal of Human Biology* 2009, 21:365-70.

Lujan ME, Chizen DR, Pierson RA. Diagnostic criteria for polycystic ovary syndrome: pitfalls and controversies. *Journal of Obstetrics & Gynaecology Canada* 2008, 30(8):671-9.

Lujan ME, Chizen DR, Peppin AK, Leswick D, Kriegler S, Bloski TG, Pierson RA. Improving inter-observer variability in the evaluation of ultrasonographic features of polycystic ovaries. *Reproductive Biology and Endocrinology* 2008; 6(1):30.

Mircea CN, Lujan ME, Pierson RA. Metabolic Fuel and Clinical Implications for Female Reproduction. *Journal of Obstetrics and Gynaecology Canada* 2007; 29(11):887-902.