March 1, 2014; 90 (3)

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Charlotte Schubert
**WORLD OF REPRODUCTIVE BIOLOGY**
Biol Reprod March 2014 90 (3) 46, 1-2;doi:10.1095/biolreprod.114.117325
**Full Text** **Full Text (PDF)**

## Biosketch

Carlos R. Morales, Louis Hermo, and Bernard Robaire
**A Man for All Seasons: Celebrating the Scientific Career of Yves Clermont**
Biol Reprod March 2014 90 (3) 51, 1-7; published ahead of printJanuary 29, 2014, doi:10.1095/biolreprod.113.116822
**Full Text** **Full Text (PDF)**

**Summary:** The studies made by Yves Clermont on the organization and kinetics of spermatogenesis and those on germ stem cells have made critical contributions to reproductive biology.

## Research Articles

### Embryo

Khursheed Iqbal, James L. Chitwood, Geraldine A. Meyers-Brown,Janet F. Roser, and Pablo J. Ross
**RNA-Seq Transcriptome Profiling of Equine Inner Cell Mass and Trophectoderm**
Biol Reprod March 2014 90 (3) 61, 1-9; published ahead of printJanuary 29, 2014, doi:10.1095/biolreprod.113.113928
**Abstract** **Full Text** **Full Text (PDF)** **Supplemental Data**

**Summary:** Transcriptome analysis of individual horse embryo inner cell mass and trophectoderm reveals cues toward equine embryo lineage commitment, pluripotency, epigenetic remodeling, embryo growth, and capsule formation.

Kyung-Bon Lee, Gabbine Wee, Kun Zhang, Joseph K. Folger,Jason G. Knott, and George W. Smith
**Functional Role of the Bovine Oocyte-Specific Protein JY-1 in Meiotic Maturation, Cumulus Expansion, and Subsequent Embryonic Development**
Biol Reprod March 2014 90 (3) 69, 1-7; published ahead of printFebruary 5, 2014, doi:10.1095/biolreprod.113.115071
**Abstract** **Full Text** **Full Text (PDF)**

**Summary:** The protein JY-1, which is specifically produced by bovine oocytes, is required for proper oocyte maturation, cumulus expansion, and early embryogenesis.

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### Female Reproductive Tract

Matthew R. Amos, Gareth D. Healey, Robert J. Goldstone,Suman M. Mahan, Anna Düvel, Hans-Joachim Schuberth, Olivier Sandra,Peter Zieger, Isabelle Die
**Differential Endometrial Cell Sensitivity to a Cholesterol-Dependent Cytolysin Links *Trueperella pyogenes* to Uterine Disease in Cattle**
Biol Reprod March 2014 90 (3) 54, 1-13; published ahead of printJanuary 29, 2014, doi:10.1095/biolreprod.113.115972
**Abstract** **Full Text** **Full Text (PDF)** **Supplemental Data**

**Summary:** Postpartum opportunistic infection with *Trueperella pyogenes* causes endometrial pathology once the protective epithelium is lost since stromal cells are more susceptible than epithelial or immune cells to a cholesterol-dependent cytolysin.

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### Gamete Biology

Dulama Richani, Melanie L. Sutton-McDowall, Laura A. Frank,Robert B. Gilchrist, and Jeremy G. Thompson
**Effect of Epidermal Growth Factor-Like Peptides on the Metabolism of In Vitro- Matured Mouse Oocytes and Cumulus Cells**
Biol Reprod March 2014 90 (3) 49, 1-10; published ahead of printJanuary 22, 2014, doi:10.1095/biolreprod.113.115311
**Abstract** **Full Text** **Full Text (PDF)**

**Summary:** EGF-like peptides increase oocyte mitochondrial activity and induce differential glucose metabolism more than in vitro maturation additives FSH and EGF, which may be the mechanism by which they increase oocyte developmental competence.

Takanori Nishimura, Wataru Fujii, Koji Sugiura, and Kunihiko Naito
**Cytoplasmic Anchoring of cAMP-Dependent Protein Kinase (PKA) by A-Kinase Anchor Proteins (AKAPs) Is Required for Meiotic Arrest of Porcine Full-Grown and Growing Oocytes**
Biol Reprod March 2014 90 (3) 58, 1-10; published ahead of printFebruary 5, 2014, doi:10.1095/biolreprod.113.114736
**Abstract** **Full Text** **Full Text (PDF)**

**Summary:** Cytoplasmic anchoring of PKA by AKAPs is required for meiotic arrest of oocytes, and the PKA-R isoform working for the maintenance of meiotic arrest changed from PRKAR1A to PRKAR2A during the acquisition of meiotic competence.

Yoshitaka Fujihara, Masaru Okabe, and Masahito Ikawa
**GPI-Anchored Protein Complex, LY6K/TEX101, Is Required for Sperm Migration into the Oviduct and Male Fertility in Mice**
Biol Reprod March 2014 90 (3) 60, 1-6; published ahead of printFebruary 5, 2014, doi:10.1095/biolreprod.113.112888
**Abstract** **Full Text** **Full Text (PDF)** **Supplemental Data**

**Summary:** LY6K/TEX101 complex is required for sperm fertilizing ability.

Francesca E. Duncan, Elizabeth Padilla-Banks, Miranda L. Bernhardt,Teri S. Ord, Wendy N. Jefferson, Stuart B. Moss,and Carmen J. Williams
**Transducin-Like Enhancer of Split-6 (TLE6) Is a Substrate of Protein Kinase A Activity During Mouse Oocyte Maturation**
Biol Reprod March 2014 90 (3) 63, 1-12; published ahead of printFebruary 5, 2014, doi:10.1095/biolreprod.113.112565
**Abstract** **Full Text** **Full Text (PDF)** **Supplemental Data**

**Summary:** The subcortical maternal complex component TLE6 is a substrate for PKA activity in regulating successful meiotic maturation.

Jonathan T. Busada, Evelyn P. Kaye, Randall H. Renegar,and Christopher B. Geyer
**Retinoic Acid Induces Multiple Hallmarks of the Prospermatogonia-to-Spermatogonia Transition in the Neonatal Mouse**
Biol Reprod March 2014 90 (3) 64, 1-11; published ahead of printJanuary 29, 2014, doi:10.1095/biolreprod.113.114645
**Abstract** **Full Text** **Full Text (PDF)** **Supplemental Figures**

**Summary:** Retinoic acid directs many of the prototypical male germ cell changes in the neonatal testis prior to meiotic initiation.

Lena Lüke, Alberto Vicens, Maximiliano Tourmente,and Eduardo R.S. Roldan
**Evolution of Protamine Genes and Changes in Sperm Head Phenotype in Rodents**
Biol Reprod March 2014 90 (3) 67, 1-8; published ahead of printFebruary 12, 2014, doi:10.1095/biolreprod.113.115956
**Abstract** **Full Text** **Full Text (PDF)** **Supplemental Data**

**Summary:** Evolutionary changes in protamines are correlated to sperm head size and elongation.

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**Immunology**

Antonio Francesco Campese, Paola Grazioli, Paola de Cesaris,Anna Riccioli, Diana Bellavia, Maria Pelullo, Fabrizio Padula,Claudia Noce, Sofia Verkhovskaia
**Mouse Sertoli Cells Sustain De Novo Generation of Regulatory T Cells by Triggering the Notch Pathway Through Soluble JAGGED1**
Biol Reprod March 2014 90 (3) 53, 1-10; published ahead of printJanuary 29, 2014, doi:10.1095/biolreprod.113.113803
**Abstract** **Full Text** **Full Text (PDF)**

**Summary:** Mouse Sertoli cell-conditioned medium triggers the conversion of peripheral $CD4^{+}FOXP3^{-}$ T cells into functional $CD4^{+}FOXP3^{+}$ Treg cells through a mechanism involving soluble JAGGED1.

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**Male Reproductive Tract**

Nando Dulal Das, Kang-Moon Song, Guo Nan Yin, Dulguun Batbold,Mi-Hye Kwon, Ki-Dong Kwon, Woo Jean Kim, Yeon Soo Kim, Ji-Kan Ryu,and Jun-Kyu Su
**Xenogenic Transplantation of Human Breast Adipose-Derived Stromal Vascular Fraction Enhances Recovery of Erectile Function in Diabetic Mice**
Biol Reprod March 2014 90 (3) 66, 1-10; published ahead of printFebruary 5, 2014, doi:10.1095/biolreprod.113.115113
**Abstract** **Full Text** **Full Text (PDF)** **Supplemental Data**

**Summary:** Xenogenic transplantation of human breast stromal vascular fraction successfully improved erectile function in diabetic mice through enhanced penile angiogenesis and neural regeneration.

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**Mechanisms of Hormone Action**

Ting Chen, Lv-Ping Zhang, Nai-Kei Wong, Ming Zhong, Chun-Hua Ren,and Chao-Qun Hu

**Pacific White Shrimp (*Litopenaeus vannamei*) Vitellogenesis-Inhibiting Hormone (VIH) Is Predominantly Expressed in the Brain and Negatively Regulates Hepatopancreatic Vitellogenin (VTG) Gene Expression**

Biol Reprod March 2014 90 (3) 47, 1-10; published ahead of printJanuary 22, 2014, doi:10.1095/biolreprod.113.115030

**Abstract** **Full Text** **Full Text (PDF)**

**Summary:** Pacific white shrimp brain and eyestalk are possible coregulators of crustacean vitellogenesis through VIH-dependent suppression of hepatopancreatic *VTG* mRNA expression.

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**Ovary**

Marietta F. Wright, Elizabeth Bowdridge, Erica L. McDermott,Samuel Richardson, James Scheidler, Qaisar Syed, Taylor Bush,E. Keith Inskeep, and Jorge A.

**Mechanisms of Intracellular Calcium Homeostasis in Developing and Mature Bovine Corpora Lutea**

Biol Reprod March 2014 90 (3) 55, 1-12; published ahead of printFebruary 5, 2014, doi:10.1095/biolreprod.113.113662

**Abstract** **Full Text** **Full Text (PDF)**

**OPEN ACCESS ARTICLE**

**Summary:** Differences in mechanisms of calcium homeostasis can explain the observed differences elicited from developing and mature bovine corpora lutea by a challenge with an exogenous luteolytic dose of PGF2alpha.

Guiyu Zhu, Li Kang, Qingqing Wei, Xinxing Cui, Shouzhi Wang,Yuxia Chen, and Yunliang Jiang

**Expression and Regulation of MMP1, MMP3, and MMP9 in the Chicken Ovary in Response to Gonadotropins, Sex Hormones, and TGFB1**

Biol Reprod March 2014 90 (3) 57, 1-11; published ahead of printJanuary 22, 2014, doi:10.1095/biolreprod.113.114249

**Abstract** **Full Text** **Full Text (PDF)**

**Summary:** The expression of MMPs are differentially expressed and regulated in chicken ovary during ovary development and ovulatory cycles.

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**Pregnancy**

Wooyoung Jeong, Jinyoung Kim, Fuller W. Bazer, and Gwonhwa Song

**Stimulatory Effect of Vascular Endothelial Growth Factor on Proliferation and Migration of Porcine Trophectoderm Cells and Their Regulation by the Phosphatidylinositol-3-Kinase-AKT and Mitogen-Activated Protein Kinase Cell Signaling Pathways**

Biol Reprod March 2014 90 (3) 50, 1-10; published ahead of printJanuary 22, 2014, doi:10.1095/biolreprod.113.115873

**Abstract** **Full Text** **Full Text (PDF)**

**Summary:** Vascular endothelial growth factor coordinately stimulates proliferation and migration of porcine trophectoderm cells through the PI3K-AKT1 and MAPK signal transduction pathway.

Zheng Fu, Bingyan Wang, Shumin Wang, Weiwei Wu, Qiang Wang,Yongjie Chen, Shuangbo Kong, Jinhua Lu, Zhenzhou Tang, Hao Ran,Zhaowei Tu, Bo He, S

**Integral Proteomic Analysis of Blastocysts Reveals Key Molecular Machinery Governing Embryonic Diapause and Reactivation for Implantation in Mice**

Biol Reprod March 2014 90 (3) 52, 1-11; published ahead of printJanuary 22, 2014, doi:10.1095/biolreprod.113.115337

**Abstract** **Full Text** **Full Text (PDF)** **Supplemental Data**

**OPEN ACCESS ARTICLE**

**Summary:** An integral proteomic analysis is provided of blastocyst reactivation from diapause, to better interpret the nature of embryonic diapause in wild animals and assess blastocyst implantation viability in human clinical practice.

Linjun Hong, Chunyan Hou, Xiaoping Li, Changchun Li, Shuhong Zhao,and Mei Yu

**Expression of Heparanase Is Associated with Breed-Specific Morphological Characters of Placental Folded Bilayer Between Yorkshire and Meishan Pigs**

Biol Reprod March 2014 90 (3) 56, 1-9; published ahead of printJanuary 15, 2014, doi:10.1095/biolreprod.113.114181

**Abstract** **Full Text** **Full Text (PDF)**

**Summary:** Differential expression of heparanase at the maternal-fetal interface of Yorkshire and Meishan pigs during gestation is associated with breed-specific morphological characters of placental folds.

Christina E. Hayward, Elizabeth J. Cowley, Tracey A. Mills,Colin P. Sibley, and Mark Wareing

**Maternal Obesity Impairs Specific Regulatory Pathways in**

**Human Myometrial Arteries**
Biol Reprod March 2014 90 (3) 65, 1-9; published ahead of printJanuary 29, 2014, doi:10.1095/biolreprod.113.112623
**Abstract** **Full Text** **Full Text (PDF)**
**OPEN ACCESS ARTICLE**

**Summary:** Maternal obesity impairs myometrial artery function specific to the thromboxane and nitric oxide pathways, which may predispose obese mothers to serious pregnancy complications.

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**Testis**

Juan Pablo Luaces, Luis Francisco Rossi, Roberta Beatriz Sciurano,Paola Rebuzzini, Valeria Merico, Maurizio Zuccotti,Maria Susana Merani, and Silvia Garag
**Loss of Sertoli-Germ Cell Adhesion Determines the Rapid Germ Cell Elimination During the Seasonal Regression of the Seminiferous Epithelium of the Large Hairy Armadillo*Chaetophractus villosus***
Biol Reprod March 2014 90 (3) 48, 1-11; published ahead of printJanuary 22, 2014, doi:10.1095/biolreprod.113.113118
**Abstract** **Full Text** **Full Text (PDF)** **Supplemental Data**

**Summary:** Loss of Sertoli-germ cell adhesion determines postmeiotic cell detachment and elimination through apoptosis and phagocytosis during the rapid seasonal regression of the seminiferous epithelium in the armadillo.

Ying Gao and Wing-Yee Lui
**Synergistic Effect of Interferon-Gamma and Tumor Necrosis Factor-Alpha on Coxsackievirus and Adenovirus Receptor Expression: An Explanation of Cell Sloughing During Testicular Inflammation in Mice**
Biol Reprod March 2014 90 (3) 59, 1-12; published ahead of printJanuary 29, 2014, doi:10.1095/biolreprod.113.113407
**Abstract** **Full Text** **Full Text (PDF)**

**Summary:** IFN-gamma and TNF alpha exert a synergistic effect to downregulate the expression of coxsackievirus and advenovirus receptor via transcriptional and post-translational regulation, which explains reduced fertility during testicular inflammation.

Denise R. Archambeault and Humphrey Hung-Chang Yao
**Loss of *Smad4* in Sertoli and Leydig Cells Leads to Testicular Dysgenesis and Hemorrhagic Tumor Formation in Mice**
Biol Reprod March 2014 90 (3) 62, 1-10; published ahead of printFebruary 5, 2014, doi:10.1095/biolreprod.113.111393
**Abstract** **Full Text** **Full Text (PDF)** **Supplemental Data**

**Summary:** Concurrent deletion of *Smad4* in mouse Sertoli and Leydig cells results in altered testis development during embryogenesis and defects in testis function with age with the eventual onset of hemorrhagic testicular tumors.

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**Toxicology**

Jackson Nteeba, Shanthi Ganesan, and Aileen F. Keating
**Impact of Obesity on Ovotoxicity Induced by 7,12-dimethylbenz[a]anthracene in Mice**
Biol Reprod March 2014 90 (3) 68, 1-10; published ahead of printFebruary 5, 2014, doi:10.1095/biolreprod.113.114215
**Abstract** **Full Text** **Full Text (PDF)**

**Summary:** Ovaries from obese mice have altered capacity for chemical biotransformation and increased DMBA-induced ovotoxicity.