

January 04, 2021	A Protocol for Evaluating Vital Signs and Maternal-Fetal Parameters Using High-Resolution Ultrasound in Pregnant Mice	Pregnancy is a unique physiological state in which two individuals coexist: the mother and the fetus.
January 01, 2018	Placenta-specific drug delivery by trophoblast-targeted nanoparticles in mice	Rationale: The availability of therapeutics to treat pregnancy complications is severely lacking, mainly due to the risk of harm to the fetus.
March 07, 2022	Maternal B cell signaling orchestrates fetal development in mice	B cell participation in early embryo/fetal development and the underlying molecular pathways have not been explored.
March 07, 2022	Diabetic pregnancy as a novel risk factor for cardiac dysfunction in the offspring—the heart as a target for fetal programming in rats	Aims/hypothesis: The impact of diabetic pregnancy has been investigated extensively regarding offspring metabolism; however, little is known about the
March 07, 2022	BCG trained innate immunity leads to fetal growth restriction by altering immune cell profile in the mouse developing placenta	Trained immunity is a new concept illustrating that innate immune cells are able to undergo a long-term metabolic and epigenetic reprogramming after i
March 07, 2022	Gestational Intermittent Hypoxia Induces Sex-Specific Impairment in Endothelial Mechanisms and Sex Steroid Hormone Levels in Male Rat Offspring	Obstructive sleep apnea (OSA) is highly prevalent during gestation and is linked with adverse fetal outcomes.
March 01, 2022	A mouse model of hypoplastic left heart syndrome demonstrating left heart hypoplasia and retrograde aortic arch flow	In hypoplastic left heart syndrome (HLHS), the mechanisms leading to left heart hypoplasia and their associated fetal abnormalities are largely unknown
October 18, 2021	Highly efficient manipulation of nervous system gene expression with NEPTUNE	Summary Genetic loss and gain of function in mice have typically been studied by using knockout or knockin mice that take months to years to generate.
August 24, 2021	Normalization of wall shear stress as a physiological mechanism for regulating maternal uterine artery expansive remodeling during pregnancy	Outward remodeling of the maternal uterine circulation during pregnancy is essential for normal uteroplacental perfusion and pregnancy outcome.
August 09, 2021	Interferon γ neutralization reduces blood pressure, uterine artery resistance index, and placental oxidative stress in placental ischemic rats	Preeclampsia (PE) is characterized by maternal hypertension, intrauterine growth restriction, and increased cytolytic natural killer cells (cNKs), which
July 07, 2021	Interpretation of wave reflections in the umbilical arterial segment of the fetoplacental circulation: computational modeling of the fetoplacental arterial tree	Placental vascular abnormalities are associated with a host of pregnancy complications including placenta mediated fetal growth restriction (FGR).
June 25, 2021	Enhanced antioxidant capacity prevents epitranscriptomic and cardiac alterations in adult offspring gestationally-exposed to ENM	Maternal engineered nanomaterial (ENM) exposure during gestation has been associated with negative long-term effects on cardiovascular health in progeny
June 25, 2021	Dietary protein source contributes to the risk of developing maternal syndrome in the Dahl salt-sensitive rat	Preeclampsia (PE) is a disorder of pregnancy, which is categorized by hypertension and proteinuria or signs of end-organ damage.
June 25, 2021	The effect of xenon on fetal neurodevelopment following maternal sevoflurane anesthesia and laparotomy in rabbits	Background: There is concern that maternal anesthesia during pregnancy impairs brain development of the human fetus.
June 09, 2021	Repeated mutation of a developmental enhancer contributed to human thermoregulatory evolution	Humans sweat to cool their bodies and have by far the highest eccrine sweat gland density among primates.

June 09, 2021	Is My Mouse Pregnant? High-Frequency Ultrasound Assessment	The mouse is the mammalian animal model of choice for many human diseases and biological processes.
June 04, 2021	Progesterone receptor isoform B regulates the OxtR-Plcl2-Trpc3 pathway to suppress uterine contractility	Uterine contractile dysfunction leads to pregnancy complications such as preterm birth and labor dystocia.
April 01, 2021	Chronic hypertension and pregnancy outcomes: Systematic review and meta-analysis	Objective: To provide an accurate assessment of complications of pregnancy in women with chronic hypertension, including comparison with population pr
March 01, 2021	Echocardiographic assessment of fetal cardiac function in the uterine artery ligation rat model of IUGR	Background: Intrauterine growth restriction (IUGR) leads to cardiac dysfunction and adverse remodeling of the fetal heart, as well as a higher risk of
March 01, 2021	Adverse maternal and fetal outcomes in a novel experimental model of pregnancy after recovery from renal ischemia-reperfusion injury	Background Recent clinical studies report that women with a history of AKI have an increased incidence of maternal and fetal adverse outcomes during p
March 01, 2021	Metabolomic differences in blastocoel and uterine fluids collected in vivo by ultrasound biomicroscopy on rabbit embryos†	The success of embryo development and implantation depends in part on the environment in which the embryo evolves.
January 14, 2021	Cystathionine γ -lyase promotes estrogen-stimulated uterine artery blood flow via glutathione homeostasis	During pregnancy, estrogen (E2) stimulates uterine artery blood flow (UBF) by enhancing nitric oxide (NO)-dependent vasodilation.
January 14, 2021	Ultrahigh-Frequency Echocardiography of Autonomic Devoid Phox2B Homozygous Embryos Does Not Reveal a Significant Cardiac Phenotype before Embryo Death	In vivo micro-imaging of mice is useful in studying the genetic basis of cardiac development in mutant embryos.
January 04, 2021	Macrophage Immune Memory Controls Endometriosis in Mice and Humans	Endometriosis is a frequent, chronic, inflammatory gynecological disease characterized by the presence of ectopic endometrial tissue causing pain and
January 04, 2021	Early Gestational Exposure to Inhaled Ozone Impairs Maternal Uterine Artery and Cardiac Function	Exposure to air pollutants such as ozone (O3) is associated with adverse pregnancy outcomes, including higher incidence of gestational hypertension, p
January 04, 2021	Maternal regulation of inflammatory cues is required for induction of preterm birth	Infection-driven inflammation in pregnancy is a major cause of spontaneous preterm birth (PTB).
January 04, 2021	AT1-receptor autoantibody exposure in utero contributes to cardiac dysfunction and increased glycolysis in fetal mice	Exposure to adverse factors in utero may lead to adaptive changes in cardiac structure and metabolism, which increases the risk of chronic cardiovascu
November 03, 2020	Differential physiological role of BIN1 isoforms in skeletal muscle development, function and regeneration	Skeletal muscle development and regeneration are tightly regulated processes.
August 10, 2020	A pictorial essay on fetal rabbit anatomy using micro-ultrasound and magnetic resonance imaging	Introduction: With this pictorial essay, we aimed to provide gestational age specific reference ranges of relevant fetal structures using micro-ultras
August 10, 2020	AMP-activated protein kinase activator AICAR attenuates hypoxia-induced murine fetal growth restriction in part by improving uterine artery blood flow	Key points: Pregnancy at high altitude is associated with a greater incidence of fetal growth restriction due, in part, to lesser uterine artery blood
March 01, 2020	Embryonic Barcoding of Equipotent Mammary Progenitors Functionally Identifies Breast Cancer Drivers	Identification of clinically relevant drivers of breast cancers in intact mammary epithelium is critical for understanding tumorigenesis yet has prove

March 01, 2020	Maternal administration of tadalafil improves fetal ventricular systolic function in a Hey2 knockout mouse model of fetal heart failure	Background: There is no established transplacental treatment for heart failure (HF) in utero, and no animal models or experimental systems of fetal HF
January 01, 2020	Exercise-induced 3'-sialyllactose in breast milk is a critical mediator to improve metabolic health and cardiac function in mouse offspring	Poor maternal environments, such as under- or overnutrition, can increase the risk for the development of obesity, type 2 diabetes and cardiovascular
January 01, 2020	Trophoblast-induced spiral artery remodelling and uteroplacental haemodynamics in pregnant rats with increased blood pressure induced by heme oxygenase inhibition	Introduction: The aim of the present study was to determine the contribution of the heme oxygenase (HO) system to the adaptation of the uteroplacental
January 01, 2020	The alarmin interleukin-1 α causes preterm birth through the NLRP3 inflammasome	Sterile intra-amniotic inflammation is a clinical condition frequently observed in women with preterm labor and birth, the leading cause of neonatal m
January 01, 2020	BOLD-MRI demonstrates acute placental and fetal organ hypoperfusion with fetal brain sparing in response to phenylephrine but not ephedrine	Introduction: We previously reported blood oxygen level dependent MRI (BOLD-MRI) for monitoring placental and fetal hemodynamic changes in mice follow
January 01, 2020	Microenvironment stiffness requires decellularized cardiac extracellular matrix to promote heart regeneration in the neonatal mouse heart	The transient period of regeneration potential in the postnatal heart suggests molecular changes with maturation influence the cardiac response to dam
January 01, 2020	Cell Fate Potential of NG2 Progenitors	Determining the origin of different glial subtypes is crucial to understand glial heterogeneity, and to enhance our knowledge of glial and progenitor
January 01, 2020	Mutation of LRP1 in cardiac neural crest cells causes congenital heart defects by perturbing outflow lengthening	The recent recovery of mutations in vesicular trafficking genes causing congenital heart disease (CHD) revealed an unexpected role for the endocytic p
January 01, 2020	Intrauterine exposure to chronic hypoxia in the rat leads to progressive diastolic function and increased aortic stiffness from early postnatal developmental stages	Aim: We sought to explore whether fetal hypoxia exposure, an insult of placental insufficiency, is associated with left ventricular dysfunction and in
January 01, 2020	Multipotency of mouse trophoblast stem cells	Background: In a number of disease processes, the body is unable to repair injured tissue, promoting the need to develop strategies for tissue repair
January 01, 2020	Speckle Tracking Echocardiography: New Ways of Translational Approaches in Preeclampsia to Detect Cardiovascular Dysfunction	Several studies have shown that women with a preeclamptic pregnancy exhibit an increased risk of cardiovascular disease.
January 01, 2020	Electrocardiogram-gated Kilohertz Visualisation (EKV) Ultrasound Allows Assessment of Neonatal Cardiac Structural and Functional Maturation and Longitudinal Evaluation of Regeneration After Injury	The small size and high heart rate of the neonatal mouse heart makes structural and functional characterisation particularly challenging.
January 01, 2020	Increased uterine artery blood flow in hypoxic murine pregnancy is not sufficient to prevent fetal growth restriction†	Incomplete maternal vascular responses to pregnancy contribute to pregnancy complications including intrauterine growth restriction (IUGR) and preecla
January 01, 2020	Cancer During Pregnancy: The Role of Vascular Toxicity in Chemotherapy-Induced Placental Toxicity	Breast cancer is diagnosed in ~0.3% of pregnant women.
January 01, 2020	Dermal exposure to the UV filter benzophenone-3 during early pregnancy affects fetal growth and sex ratio of the progeny in mice	The aim of this study was to analyze whether dermal exposure to benzophenone 3 (BP-3) during pregnancy affects critical parameters of pregnancy, and w

January 01, 2020	17-Hydroxyprogesterone caproate improves T cells and NK cells in response to placental ischemia; new mechanisms of action for an old drug	Preeclampsia (PE) is new onset hypertension during pregnancy associated with increased uterine artery resistance (UARI) and an imbalance among CD4 + T
January 01, 2020	Cardiac, renal and uterine hemodynamics changes throughout pregnancy in rats with a prolonged high fat diet from an early age	OBJECTIVE: To examine whether the cardiac, renal and uterine physiological hemodynamic changes during gestation are altered in rats with an early and
November 01, 2019	"Females Are Not Just 'Protected' Males": Sex-Specific Vulnerabilities in Placenta and Brain after Prenatal Immune Disruption	Current perceptions of genetic and environmental vulnerabilities in the developing fetus are biased toward male outcomes.
September 01, 2019	Novel insights into the genetic landscape of congenital heart disease with systems genetics	We recently conducted a large-scale mouse mutagenesis screen and uncovered a central role for cilia in the pathogenesis of congenital heart disease (C
September 01, 2019	Biaxial biomechanical properties of the nonpregnant murine cervix and uterus	From a biomechanical perspective, female reproductive health is an understudied area of research.
June 01, 2019	Exposure to systemic and intrauterine inflammation leads to decreased pup survival via different placental mechanisms	Problem: Exposure to systemic maternal inflammation (i.e., maternal sepsis, influenza, human immunodeficiency virus, or pyelonephritis) and intrauteri
January 12, 2019	Ozone exposure during implantation increases serum bioactivity in HTR-8/SVneo trophoblasts	Implantation is a sensitive window in reproductive development during which disruptions may increase the risk of adverse pregnancy outcomes including
January 11, 2019	Placental vascular abnormalities in the mouse alters umbilical artery wave reflections	Current methods to detect placental vascular pathologies that monitor Doppler ultrasound changes in umbilical artery (UA) pulsatility have only modera
January 01, 2019	Longitudinal characterization of local perfusion of the rat placenta using contrast-enhanced ultrasound imaging	The placenta performs many physiological functions critical for development.
January 01, 2019	β3 Adrenergic Activation Improves Maternal and Offspring Perinatal Outcomes in Diet Induced Prepregnancy Obesity in Mice	Objective: Prepregnancy obesity is an epidemic disorder that seriously threatens both maternal and offspring health.
January 01, 2019	Pregnancy-Associated Cardiac Hypertrophy in Corin-Deficient Mice: Observations in a Transgenic Model of Preeclampsia	Background: Preeclampsia increases the risk of heart disease.
January 01, 2019	Effect of maternal betamethasone administration on fetoplacental vascular resistance in the mouse†	Antenatal corticosteroids are often administered to women at risk of preterm birth to accelerate fetal lung development; however, there is evidence th
January 01, 2019	Aspirin pre-treatment modulates ozone-induced fetal growth restriction and alterations in uterine blood flow in rats	Prenatal exposure to ozone has been linked to low birth weight in people and fetal growth restriction in rats.
January 01, 2019	IL-10 producing B cells rescue mouse fetuses from inflammation-driven fetal death and are able to modulate T cell immune responses	Understanding the mechanisms leading to fetal death following maternal subclinical infections is crucial to develop new therapeutic strategies.
January 01, 2019	Transient callosal projections of L4 neurons are eliminated for the acquisition of local connectivity	Interhemispheric axons of the corpus callosum (CC) facilitate the higher order functions of the cerebral cortex.
January 01, 2019	Heterogeneous Cellular Contributions to Elastic Laminae Formation in Arterial Wall Development	Rationale: Elastin is an important ECM (extracellular matrix) protein in large and small arteries.

January 01, 2019	Identification of novel cerebellar developmental transcriptional regulators with motif activity analysis	Background: The work of the FANTOM5 Consortium has brought forth a new level of understanding of the regulation of gene transcription and the cellular
January 01, 2019	Fetal growth outcomes following peri-implantation exposure of Long-Evans rats to noise and ozone differ by sex	Background: Exposure to air pollution and high levels of noise have both been independently associated with the development of adverse pregnancy outco
January 01, 2019	Prenatal exposure to testosterone induces cardiac hypertrophy in adult female rats through enhanced Pkcδ expression in cardiac myocytes	High circulating androgen in women with polycystic ovary syndrome (PCOS) may increase the risk of cardiovascular disease in offspring.
December 15, 2018	Bisphenol A exposure during early pregnancy impairs uterine spiral artery remodeling and provokes intrauterine growth restriction in mice	Endocrine disrupting chemicals are long suspected to impair reproductive health.
December 12, 2018	Maternal cardiac messenger RNA expression of extracellular matrix proteins in mice during pregnancy and the postpartum period	Pregnancy creates a condition of cardiac volume overload which leads to physiological sive analysis of extracellular matrix protein eccentric hypertro
December 01, 2018	Sex-specific effects of advanced maternal age on cardiovascular function in aged adult rat offspring	Pregnancy at an advanced maternal age has an increased risk of complications for both the mothers and their offspring.
November 06, 2018	Sapropterin Treatment Prevents Congenital Heart Defects Induced by Pregestational Diabetes Mellitus in Mice	Background—Tetrahydrobiopterin is a cofactor of endothelial NO synthase (eNOS), which is critical to embryonic heart development.
October 12, 2018	Repurposing simvastatin as a therapy for preterm labor: evidence from preclinical models	Preterm birth (PTB), the leading cause of neonatal morbidity and mortality, urgently requires novel therapeutic agents.
July 31, 2018	Comparative determination of placental perfusion by magnetic resonance imaging and contrast-enhanced ultrasound in a murine model of intrauterine growth restriction	Introduction: Exploration of placental perfusion is essential in screening for dysfunctions impairing fetal growth.
March 15, 2018	The large-conductance voltage- and Ca ²⁺ -activated K ⁺ channel and its γ1-subunit modulate mouse uterine artery function during pregnancy	The uterine artery (UA) markedly vasodilates during pregnancy to direct blood flow to the developing fetus.
January 22, 2018	Preclinical Ultrasound-Guided Photoacoustic Imaging of the Placenta in Normal and Pathologic Pregnancy	Placental oxygenation varies throughout pregnancy.
January 01, 2018	Diet-induced obesity alters the maternal metabolome and early placenta transcriptome and decreases placenta vascularity in the mouse	Obesity in a mouse model leads to alterations in the maternal metabolome and early placenta transcriptome as well as changes in vascularity later in g
January 01, 2018	Systemic Evaluation of Vascular Dysfunction by High-Resolution Sonography in an N ^x -Nitro- L -Arginine Methyl Ester Hydrochloride – Induced Mouse Model of Preeclampsia-Like Symptoms	Objectives—The purpose of this study was to evaluate vascular function, including arterial resistance and endothelial function, by high-resolution son
January 01, 2018	Cohort-based multiscale analysis of hemodynamic-driven growth and remodeling of the embryonic pharyngeal arch arteries	Growth and remodeling of the primitive pharyngeal arch artery (PAA) network into the extracardiac great vessels is poorly understood but a major sourc
January 01, 2018	Maternal treatment with a placental-targeted antioxidant (MitoQ) impacts offspring cardiovascular function in a rat model of prenatal hypoxia	Intrauterine growth restriction, a common consequence of prenatal hypoxia, is a leading cause of fetal morbidity and mortality with a significant impa
January 01, 2018	Endometrial regeneration using cell sheet transplantation techniques in rats facilitates successful fertilization and pregnancy	Objective: To regenerate functional endometrium tissue using “cell sheet” techniques as a regenerative medicine approach to address endometrial disord

January 01, 2018	G-protein receptor kinases 2, 5 and 6 redundantly modulate Smoothed-GATA transcriptional crosstalk in fetal mouse hearts	G-protein receptor kinases (GRKs) regulate adult hearts by modulating inotropic, chronotropic and hypertrophic signaling of 7-transmembrane spanning n
January 01, 2018	Trichloroethylene perturbs HNF4a expression and activity in the developing chick heart	Exposure to trichloroethylene (TCE) is linked to formation of congenital heart defects in humans and animals.
January 01, 2018	Comprehensive Evaluation of the Effectiveness and Safety of Placenta-Targeted Drug Delivery Using Three Complementary Methods	No effective treatments currently exist for placenta-associated pregnancy complications, and developing strategies for the targeted delivery of drugs
January 01, 2018	In Vivo Evaluation of the Cardiovascular System of Mouse Embryo and Fetus Using High Frequency Ultrasound	Genetically engineered mice have been widely used for studying cardiovascular development, physiology and diseases.
January 01, 2018	Increased placental T cell trafficking results in adverse neurobehavioral outcomes in offspring exposed to sub-chronic maternal inflammation	Interleukin-1 beta (IL-1 β) is a cytokine mediator of perinatal brain injury.
January 01, 2018	Intermittent hypoxia in utero damages postnatal growth and cardiovascular function in rats	PURPOSE: Obstructive sleep apnea (OSA) is common in pregnancy, and may compromise fetal and even postnatal development.
January 01, 2018	Simultaneous ablation of uterine natural killer cells and uterine mast cells in mice leads to poor vascularization and abnormal doppler measurements that compromise fetal well-being	Intrauterine growth restriction (IUGR) is a serious pregnancy complication with short- and long-term health consequences.
January 01, 2018	Lipopolysaccharide-induced maternal inflammation induces direct placental injury without alteration in placental blood flow and induces a secondary fetal intestinal injury that persists into adulthood	PROBLEM: Premature birth complicates 10%-12% of deliveries.
January 01, 2018	Lung function and pulmonary artery blood flow following prenatal maternal retinoic acid and imatinib in the nitrofen model of congenital diaphragmatic hernia	Background: Lung and pulmonary vascular maldevelopment in congenital diaphragmatic hernia (CDH) results in significant morbidity and mortality.
January 01, 2018	Three-dimensional visualization of extracellular matrix networks during murine development	The extracellular matrix (ECM) plays a crucial role in embryogenesis, serving both as a substrate to which cells attach and as an active regulator of
January 01, 2018	Caveolin1 Identifies a Specific Subpopulation of Cerebral Cortex Callosal Projection Neurons (CPN) Including Dual Projecting Cortical Callosal/Frontal Projection Neurons (CPN/FPN)	The neocortex is composed of many distinct subtypes of neurons that must form precise subtype-specific connections to enable the cortex to perform com
December 21, 2017	Uterine Artery Flow and Offspring Growth in Long-Evans Rats following Maternal Exposure to Ozone during Implantation	BACKGROUND: Epidemiological studies suggest that increased ozone exposure during gestation may compromise fetal growth.
December 13, 2017	Tacrolimus in the prevention of adverse pregnancy outcomes and diabetes-associated embryopathies in obese and diabetic mice	Background: T2DM is a high-risk pregnancy with adverse fetal and maternal outcomes including repeated miscarriages and fetal malformations.
December 01, 2017	Photoacoustic imaging for in vivo quantification of placental oxygenation in mice	Accurate analysis of placental and fetal oxygenation is critical during pregnancy.
September 01, 2017	Mouse Oocytes Acquire Mechanisms That Permit Independent Cell Volume Regulation at the End of Oogenesis	Normal pregnancy is associated with decreased uterine vascular contraction and increased blood flow even though angiotensin II (AngII) levels are incr
August 03, 2017	Viscosity and haemodynamics in a late gestation rat fetoplacental arterial network	The placenta is a transient organ which develops during pregnancy to provide haemotrophic support for healthy fetal growth and development.

May 22, 2017	The complex genetics of hypoplastic left heart syndrome	Congenital heart disease (CHD) affects up to 1% of live births ¹ .
May 01, 2017	Ultrasound detection of altered placental vascular morphology based on hemodynamic pulse wave reflection.	Abnormally pulsatile umbilical artery (UA) Doppler ultrasound velocity waveforms are a hallmark of severe or early onset placental-mediated intrauteri
February 28, 2017	Use of high-frequency ultrasound to study the prenatal development of cranial neural tube defects and hydrocephalus in Gldc -deficient mice	OBJECTIVE We used non-invasive high frequency ultrasound (HFUS) imaging to investigate embryonic brain development in a mouse model for neural tube de
February 15, 2017	Exposure to placental ischemia impairs postpartum maternal renal and cardiac function in rats	INTRODUCTION: Women with a history of preeclampsia (PE) have an increased risk to develop cardiovascular and renal diseases later in life, but the mec
February 02, 2017	Stellate cells drive maturation of the entorhinal-hippocampal circuit	The neural representation of space relies on a network of entorhinal-hippocampal cell types with firing patterns tuned to different abstract features
February 01, 2017	The transcription factor GATA4 promotes myocardial regeneration in neonatal mice	Heart failure is often the consequence of insufficient cardiac regeneration.
February 01, 2017	Peptidomics Analysis of Transient Regeneration in the Neonatal Mouse Heart	Neonatal mouse hearts have completely regenerative capability after birth, but the ability to regenerate rapidly lost after 7 days, the mechanism has
February 01, 2017	Ultrasound-guided spectral photoacoustic imaging of hemoglobin oxygenation during development	Few technologies are capable of imaging in vivo function during development.
January 20, 2017	Serelaxin treatment promotes adaptive hypertrophy but does not prevent heart failure in experimental peripartum cardiomyopathy	Aims: Peripartum cardiomyopathy (PPCM) is a systolic left ventricular dysfunction developing in the peripartum phase in previously healthy women.
January 20, 2017	Postnatal resveratrol supplementation improves cardiovascular function in male and female intrauterine growth restricted offspring	Intrauterine growth restriction (IUGR) may predispose offspring to an increased susceptibility of developing cardiovascular disease (CVD) in adult lif
January 14, 2017	Hyaluronidase 2 Deficiency Causes Increased Mesenchymal Cells, Congenital Heart Defects, and Heart Failure CLINICAL PERSPECTIVE	BACKGROUND Hyaluronan (HA) is required for endothelial-to-mesenchymal transition and normal heart development in the mouse.
January 12, 2017	Real-Time Monitoring of Placental Oxygenation during Maternal Hypoxia and Hyperoxygenation Using Photoacoustic Imaging	PURPOSE: This preclinical study aimed to evaluate placental oxygenation in pregnant rats by real-time photoacoustic (PA) imaging on different days of
January 03, 2017	Three-Dimensional High-Frequency Ultrasonography for Early Detection and Characterization of Embryo Implantation Site Development in the Mouse	Ultrasonography is a powerful tool to non-invasively monitor in real time the development of the human fetus in utero.
January 01, 2016	Hemodynamic Forces Sculpt Developing Heart Valves through a KLF2-WNT9B Paracrine Signaling Axis	Hemodynamic forces play an essential epigenetic role in heart valve development, but how they do so is not known.
January 01, 2016	Visualizing Changes in Cdkn1c Expression Links Early-Life Adversity to Imprint Mis-regulation in Adults	Imprinted genes are regulated according to parental origin and can influence embryonic growth and metabolism and confer disease susceptibility.
January 01, 2016	Gestational Stage and IFN-λ Signaling Regulate ZIKV Infection In Utero	Although Zika virus (ZIKV)-induced congenital dis- ease occurs more frequently during early stages of pregnancy, its basis remains undefined.

January 01, 2016	Phenotyping cardiac and structural birth defects in fetal and newborn mice	Mouse models are invaluable for investigating the developmental etiology and molecular pathogenesis of structural birth defects.
January 01, 2016	Persistence of risk factors associated with maternal cardiovascular disease following aberrant inflammation in rat pregnancy	Introduction: Pre-eclampsia is associated with increased risk of subsequent cardiovascular and metabolic disease in the affected mothers.
January 01, 2016	Monitoring health and reproductive status of olms (Proteus anguinus) by ultrasound	The olm (Proteus anguinus) is a troglomorphic, neotenic amphibian with extraordinary life expectancy and unique adaptations that deserve further inve
January 01, 2016	Gastric emptying is reduced in experimental NEC and correlates with the severity of intestinal damage	Purpose: The aim of this study is to assess gastric emptying in experimental necrotizing enterocolitis (NEC) and its diagnostic significance using non
January 01, 2016	Vitamin D supplementation reduces some AT 1 -AA- induced downstream targets implicated in preeclampsia including hypertension	Autoantibodies to the ANG II type I receptor (AT1 -AA) are associated with preeclampsia (PE).
January 01, 2016	A mouse model of antepartum stillbirth	Background Many stillbirths of normally formed fetuses in the third trimester could be prevented via delivery if reliable means to anticipate this out
January 01, 2016	Temporally Distinct Six2-Positive Second Heart Field Progenitors Regulate Mammalian Heart Development and Disease	The embryonic process of forming a complex struc- ture such as the heart remains poorly understood.
December 19, 2016	TRPC4 α and TRPC4 β Similarly Affect Neonatal Cardiomyocyte Survival during Chronic GPCR Stimulation	The Transient Receptor Potential Channel Subunit 4 (TRPC4) has been considered as a crucial Ca ²⁺ component in cardiomyocytes promoting structural and
December 01, 2016	Myocardial VHL-HIF Signaling Controls an Embryonic Metabolic Switch Essential for Cardiac Maturation	SUMMARY While gene regulatory networks involved in cardio- genesis have been characterized, the role of bioener- getics remains less studied.
December 01, 2016	Serelaxin improves the pathophysiology of placental ischemia in the reduced uterine perfusion pressure rat model of preeclampsia	Preeclampsia is a hypertensive disorder of pregnancy with limited therapeutic options.
December 01, 2016	Maternal vascular responses to hypoxia in a rat model of intrauterine growth restriction	Maternal vascular responses to hypoxia in a rat model of intrauterine growth restriction.
November 24, 2016	Neonatal Diesel Exhaust Particulate Exposure Does Not Predispose Mice to Adult Cardiac Hypertrophy or Heart Failure	Background: We have previously reported that in utero and early life exposure to diesel exhaust particulates predisposes mice to adult heart failure,
November 23, 2016	Intrauterine Growth Restriction Influences Vascular Remodeling and Stiffening in the Weanling Rat More than Sex or Diet	Intrauterine growth restriction (IUGR) increases the incidence of adult cardiovascular disease (CVD).
November 10, 2016	Mas receptor contributes to pregnancy-induced cardiac remodelling	Previous studies have demonstrated a protective effect of the Ang-(1-7)/Mas receptor axis on pathological cardiac hypertrophy.
November 09, 2016	Maternal T Regulatory Cell Depletion Impairs Embryo Implantation Which Can Be Corrected With Adoptive T Regulatory Cell Transfer	Maternal immune tolerance of fetal engraftment is critical for the establishment and maintenance of pregnancy, but the exact mechanisms permitting thi
November 01, 2016	Sema6D acts downstream of bone morphogenetic protein signalling to promote atrioventricular cushion development in mice	AIMS Bone morphogenetic protein (BMP) signalling plays a key role in regulating the development of the atrioventricular (AV) septum and valves; howeve

October 31, 2016	Congenital valvular defects associated with deleterious mutations in the PLD1 gene	BACKGROUND The underlying molecular aetiology of congenital heart defects is largely unknown.
October 19, 2016	Neonatal cardiac dysfunction and transcriptome changes caused by the absence of Celf1	The RNA binding protein Celf1 regulates alternative splicing in the nucleus and mRNA stability and translation in the cytoplasm.
August 08, 2016	Postnatal Loss of Kindlin-2 Leads to Progressive Heart Failure CLINICAL PERSPECTIVE	BACKGROUND The striated muscle costamere, a multiprotein complex at the boundary between the sarcomere and the sarcolemma, plays an integral role in m
June 23, 2016	Human Chorionic Gonadotropin Has Anti-Inflammatory Effects at the Maternal-Fetal Interface and Prevents Endotoxin-Induced Preterm Birth, but Causes Dystocia and Fetal Compromise in Mice	Human chorionic gonadotropin (hCG) is implicated in the maintenance of uterine quiescence by down-regulating myometrial gap junctions during pregnancy
March 24, 2016	Transplacental sildenafil rescues lung abnormalities in the rabbit model of diaphragmatic hernia	Introduction The management of congenital diaphragmatic hernia (DH) would benefit from an antenatal medical therapy, which addresses both lung hypopla
March 15, 2016	Maternal high-fat diet impairs cardiac function in offspring of diabetic pregnancy through metabolic stress and mitochondrial dysfunction	Offspring of diabetic pregnancies are at risk of cardiovascular disease at birth and throughout life, purportedly through fuel-mediated influences on
March 15, 2016	GATA4 regulates Fgf16 to promote heart repair after injury	Although the mammalian heart can regenerate during the neonatal stage, this endogenous regenerative capacity is lost with age.
March 01, 2016	KMT2D regulates specific programs in heart development via histone H3 lysine 4 di-methylation	KMT2D, which encodes a histone H3K4 methyltransferase, has been implicated in human congenital heart disease in the context of Kabuki syndrome.
January 01, 2015	The chromatin binding protein Smyd1 restricts adult mammalian heart growth.	All terminally differentiated organs face two challenges: maintaining their cellular identity and restricting organ size.
January 01, 2015	Efficient production of cynomolgus monkeys with a toolbox of enhanced assisted reproductive technologies	The efficiency of assisted reproductive technologies (ARTs) in nonhuman primates is low due to no screening criterions for selecting sperm, oocyte, an
January 01, 2015	Pravastatin ameliorates placental vascular defects, fetal growth, and cardiac function in a model of glucocorticoid excess	Fetoplacental glucocorticoid overexposure is a significant mecha- nism underlying fetal growth restriction and the programming of adverse health outco
January 01, 2015	RGS2 squelches vascular G i/o and G q signaling to modulate myogenic tone and promote uterine blood flow	Uterine artery blood flow (UABF) is critical to maintaining uterine perfusion in nonpregnant states and for uteroplacental delivery of nutrients and o
January 01, 2015	Progressive Vascular Functional and Structural Damage in a Bronchopulmonary Dysplasia Model in Preterm Rabbits Exposed to Hyperoxia	Bronchopulmonary dysplasia (BPD) is caused by preterm neonatal lung injury and results in oxygen dependency and pulmonary hypertension.
January 01, 2015	Oral oestrogen reverses ovariectomy-induced morning surge hypertension in growth-restricted mice	Perinatal growth restriction (GR) is associated with heightened sympathetic tone and hypertension.
January 01, 2015	Postnatal Cardiovascular Consequences in the Offspring of Pregnant Rats Exposed to Smoking and Smoking Cessation Pharmacotherapies	Approximately 20% of pregnant women smoke despite intentions to quit.
January 01, 2015	Evaluation of the foetal time to death in mice after application of direct and indirect euthanasia methods	Directive 2010/63/EU on the protection of animals used for scientific purposes requires that the killing of mammal foetuses during the last third of t

January 01, 2015	Effects of vitamin A deficiency in the postnatal mouse heart: role of hepatic retinoid stores	To determine whether hepatic depletion of vitamin A (VA) stores has an effect on the postnatal heart, studies were carried out with mice lacking liver
November 01, 2015	In Utero Exposure to a Cardiac Teratogen Causes Reversible Deficits in Postnatal Cardiovascular Function, But Altered Adaptation to the Burden of Pregnancy	Congenital heart defects (CHD) are the most common birth anomaly and while many resolve spontaneously by 1 year of age, the lifelong burden on survivors
May 21, 2015	Evaluation of utero-placental and fetal hemodynamic parameters throughout gestation in pregnant mice using high-frequency ultrasound	Throughout gestation, changes in maternal and fetal Doppler parameters in pregnant mice, similar to those obtained in human fetuses, were detected using
February 04, 2015	In Utero Intra-cardiac Tomato-lectin Injections on Mouse Embryos to Gauge Renal Blood Flow	The formation and perfusion of developing renal blood vessels (apart from glomeruli) are greatly understudied.
February 01, 2015	Placental growth factor influences maternal cardiovascular adaptation to pregnancy in mice.	In healthy human pregnancies, placental growth factor (PGF) concentrations rise in maternal plasma during early gestation, peak over Weeks 26-30, then
January 01, 2015	The intracellular domains of Notch1 and 2 are functionally equivalent during development and carcinogenesis	Although Notch1 and Notch2 are closely related paralogs and function through the same canonical signaling pathway, they contribute to different outcomes
January 01, 2015	Compatibility of a Novel Thrombospondin-1 Analog with Fertility and Pregnancy in a Xenograft Mouse Model of Endometriosis	Endometriosis is a gynecological disease defined by the growth of endometrium outside of the uterus.
January 01, 2015	Kidney dysplasia and variable hydronephrosis, a new mutation affecting the odd-skipped related 1 gene in the mouse, causes variable defects in kidney development and hydronephrosis	Many genes, including odd-skipped related 1 (Osr1), are involved in regulation of mammalian kidney development.
January 01, 2015	Uterine artery dysfunction in pregnant ACE2 knockout mice is associated with placental hypoxia and reduced umbilical blood flow velocity.	Angiotensin-converting enzyme 2 (ACE2) knockout is associated with reduced fetal weight at late gestation; however, whether uteroplacental vascular an
January 01, 2015	Effects of High Intensity Interval Training on Pregnant Rats, and the Placenta, Heart and Liver of Their Fetuses	OBJECTIVE: To investigate the effects of high intensity interval training (HIIT) on the maternal heart, fetuses and placentas of pregnant rats.
August 16, 2014	Assessment of flow distribution in the mouse fetal circulation at late gestation by high-frequency Doppler ultrasound	This study used high-frequency ultrasound to evaluate the flow distribution in the mouse fetal circulation at late gestation.
May 01, 2014	Adverse perinatal environment contributes to altered cardiac development and function	Epidemiological observations report an association between intrauterine growth restriction (IUGR) and cardiovascular diseases.
January 13, 2014	Inflammation in rat pregnancy inhibits spiral artery remodeling leading to fetal growth restriction and features of preeclampsia	Fetal growth restriction (FGR) and preeclampsia (PE) are often associated with abnormal maternal inflammation, deficient spiral artery (SA) remodeling
October 15, 2013	Chronic carbon monoxide inhalation during pregnancy augments uterine artery blood flow and uteroplacental vascular growth in mice.	End-tidal breath carbon monoxide (CO) is abnormally low in women with preeclampsia (PE), while women smoking during pregnancy have shown an increase in
October 01, 2013	Junctophilin-2 is necessary for T-tubule maturation during mouse heart development.	AIMS: Transverse tubules (TTs) provide the basic subcellular structures that facilitate excitation-contraction (EC) coupling, the essential process that
September 01, 2013	Experimental hyperleptinemia in neonatal rats leads to selective leptin responsiveness, hypertension, and altered myocardial function.	The prevalence of obesity among pregnant women is increasing.

September 01, 2013	Fetal rat hearts do not display acute cardiotoxicity in response to maternal Doxorubicin treatment.	Anthracyclines are used to treat cancers during the second and third trimester of pregnancy.
July 01, 2013	Cardiomyopathy and diastolic dysfunction in the embryo and neonate of a type 1 diabetic mouse model.	OBJECTIVE: The purpose of this study was to examine the effect of maternal type 1 diabetes on the structure and function of the embryonic and neonatal
June 01, 2013	Analysis of maternal and fetal cardiovascular systems during hyperglycemic pregnancy in the nonobese diabetic mouse.	Preconception or gestationally induced diabetes increases morbidities and elevates long-term cardiovascular disease risks in women and their children.
July 10, 2012	Amniotic fluid inhibits Toll-like receptor 4 signaling in the fetal and neonatal intestinal epithelium	The fetal intestinal mucosa is characterized by elevated Toll-like receptor 4 (TLR4) expression, which can lead to the development of necrotizing en
July 01, 2012	Effect of the anti-oxidant tempol on fetal growth in a mouse model of fetal growth restriction.	Fetal growth restriction (FGR) greatly increases the risk of perinatal morbidity and mortality and is associated with increased uterine artery resista
July 01, 2012	Estimation of mouse fetal weight by ultrasonography: application from clinic to laboratory	Ultrasonographic assessment of fetal growth to estimate fetal weight has been widely used in clinical obstetrics but not in laboratory mice.
July 01, 2012	Endothelial nitric oxide synthase deficiency reduces uterine blood flow, spiral artery elongation, and placental oxygenation in pregnant mice.	Preeclampsia is associated with impaired uteroplacental adaptations during pregnancy and abnormalities in the endothelial NO synthase (eNOS)-NO pathwa
May 09, 2012	Cardiac angiogenic imbalance leads to peripartum cardiomyopathy	Peripartum cardiomyopathy (PPCM) is an often fatal disease that affects pregnant women who are near delivery, and it occurs more frequently in women w
January 01, 2011	ROR Beta induces barrel-like neuronal clusters in the developing neocortex	Neurons in layer IV of the rodent whisker somatosensory cortex are tangentially organized in periodic clusters called barrels, each of which is innerv
January 01, 2011	Intracardial embryonic delivery of developmental modifiers in utero	Our knowledge of organ ontogeny is largely based on loss-of-function (knockout) or gain-of-function (transgenesis) approaches.
April 01, 2011	Effect of gestational diabetes on maternal artery function.	Endothelial dysfunction has been observed systemically in women with gestational diabetes (GDM).
January 01, 2010	Spontaneous Pregnancy Loss Mediated by Abnormal Maternal Inflammation in Rats Is Linked to Deficient Uteroplacental Perfusion	Abnormal maternal inflammation during pregnancy is associated with spontaneous pregnancy loss and intrauterine fetal growth restriction.
September 02, 2010	The critical roles of platelet activation and reduced NO bioavailability in fatal pulmonary arterial hypertension in a murine hemolysis model	Pulmonary arterial hypertension (PAH) is suspected to be a strong mortality determinant of hemolytic disorders.
December 01, 2009	Using ultrasonography to define fetal-maternal relationships: moving from humans to mice.	Ultrasound scanning is a noninvasive, accurate, and cost-effective method to create images of the female reproductive tract clinically and in research
July 01, 2009	Developmental programming resulting from maternal obesity in mice: effects on myocardial ischaemia-reperfusion injury.	A comprehensive number of epidemiological and animal studies suggest that prenatal and early life events are important determinants for disorders late
January 01, 2009	Hypoxia induces dilated cardiomyopathy in the chick embryo: mechanism, intervention, and long-term consequences.	BACKGROUND: Intrauterine growth restriction is associated with an increased future risk for developing cardiovascular diseases.

January 01, 2009	Folate rescues lithium-, homocysteine- and Wnt3A-induced vertebrate cardiac anomalies.	Elevated plasma homocysteine (HCy), which results from folate (folic acid, FA) deficiency, and the mood-stabilizing drug lithium (Li) are both linked
April 01, 2008	Regulation of maternal and fetal hemodynamics by heme oxygenase in mice.	Heme oxygenase (HMOX) regulates vascular tone and blood pressure through the production of carbon monoxide (CO), a vasodilator derived from the heme d
January 01, 2008	In vivo quantification of embryonic and placental growth during gestation in mice using micro-ultrasound.	BACKGROUND: Non-invasive micro-ultrasound was evaluated as a method to quantify intrauterine growth phenotypes in mice.
April 01, 2007	Initial experience with high frequency ultrasound for the newborn C57BL mouse.	The mouse has become a powerful genetic tool for studying genes involved in cardiac development and congenital heart disease.
May 26, 2006	Developmental changes in hemodynamics of uterine artery, utero- and umbilicoplacental, and vitelline circulations in mouse throughout gestation	In human pregnancy, abnormal placental hemodynamics likely contribute to the etiology of early-onset preeclampsia and fetal intrauterine growth restri
January 01, 2005	Embryonic and neonatal phenotyping of genetically engineered mice.	Considerable progress has been made in adapting existing and developing new technologies to enable increasingly detailed phenotypic information to be
January 01, 2005	Cardiovascular function in mice during normal pregnancy and in the absence of endothelial NO synthase	In humans, the increased cardiovascular demands of pregnancy are met by increases in cardiac output (CO), stroke volume (SV), plasma volume (PV), and
January 01, 2003	Diabetic Autonomic Neuropathy	ABSTRACT—Diabetic autonomic neuropathy (DAN) is a serious and common complication of diabetes.