
BIOGRAPHICAL SKETCH

Program Director

NAME: BIRD, IAN

eRA COMMONS USER NAME (agency login): IMBIRD

POSITION TITLE: Professor Dept OB/GYN

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Birmingham University, Birmingham	BS	07/1984	Medical Biochemistry
University of London, London	PHD	11/1987	Biochemistry
University of Edinburgh, Edinburgh	Fellow	01/1989	Biochemistry
University of Edinburgh, Edinburgh	Fellow	04/1991	Clinical Chemistry
University of Texas, Dallas	Fellow	01/1993	Reproductive Biology Sciences

A. Personal Statement

Dr Bird is a PhD Professor in the Dept. of OB/Gyn tenured in Research as his primary area and has an extensive track record of grant funding from the NIH AHA and USDA. He currently reviews grant applications for USDA, NIH, MRC and CIHR Canada and Wellcome Trust UK. He has been an active researcher in molecular endocrinology for 30 years and has published more than 155 PubMed listed publications. Dr. Bird runs an active laboratory with graduate students, postdoctoral scientists, residents and MD Fellows. His Predoctoral students have successfully competed for American Heart Association (AHA) Pre and Postdoctoral Fellowship awards. His graduate students have frequently been selected for oral presentations at SGI, Society for Study of Reproduction (SSR) and Endocrine Society meetings and his Postdoctoral/Scientist Trainees have also been self funded by NIH and received Presidents Presenters awards from the SGI. He is a trainer in the MSTP and MCP Programs and a member of more than a dozen student committees across multiple programs. He has been a member of the Endocrinology and Reproductive Physiology (ERP) Program since 1996 and served as Director since 1999. The ERP Training Grant Steering Committee was set up on his initiative and became the ERP Program's current steering committee. In 2004, under Dr Bird's leadership, the ERP Program was been continuously funded by a T32 Predoctoral training grant for PhD Trainees. The T32 renewals in May 2009 and 2014 were funded on first submission. In 2006, Dr. Bird worked extensively with the Dean's of the Graduate School and School of Medicine and Public Health to achieve the ERP Program's realignment to the Medical School, and at the same time, Dr Bird worked with Dr Shah to establish the new translational degree fellowship track for MD Fellows from the Dept of OB/GYN to train in the ERP program, and is continuing with his long history of actively training both Residents and Fellows in his laboratory. In all these activities and beyond, he has been an active recruiter and trainer of URM students enrolled to both the ERP Program and other campus programs at UW Madison. He is Col on the TEAM Science R25 lead by Mary Carnes MD. Based on all this experience, he is also Vice Chair in Dept OBGyn and serves to mentor both Trainees and Junior Faculty in their chosen career paths. In the past decade he has served as Secretary treasurer of Perinatal Research Society, where he showed extensive leadership promoting the careers of Young and New Investigators and establishing a Grants Writing Workshop. He currently serves as Secretary Treasurer of SRI.

B. Positions and Honors

Positions and Employment

1993 - 1994 Assistant Instructor, University of Texas Southwestern Medical Center, Dallas, TX
1994 - 1999 Assistant Professor -OB/GYN, University of Wisconsin, Madison, WI
1999 - 2003 Associate Professor with Tenure, University of Wisconsin, Madison, WI
2000 - Affiliate Appointment -Pediatrics, University of Wisconsin, Madison, WI
2000 - Chair and Director -Endocrinology Reproductive Physiology Graduate School Program, University of Wisconsin, Madison, WI
2003 - Professor -OB/GYN, University of Wisconsin, Madison, WI

- 2013 - Director Integrated Graduate Training -OB/GYN, University of Wisconsin, Madison, WI
2014 - Vice Chair Integrated Graduate Training -OB/GYN, University of Wisconsin, Madison, WI

Other Experience and Professional Memberships

- 1986 - 1997 Member, Biochemical Society (UK)
1997 - Member, Perinatal Research Society
1997 - 1997 Co-Organizer, No-Name Society Retreat
1997 - 1998 Associate Member, Society Gynecologic Investigation (USA)
1997 - 2006 Member, Endocrine Society (USA)
1998 - Full Member, Society Gynecologic Investigation (USA)

Honors

- 1984 Science and Engineering Research Council, CASE Postgraduate Studentship
1988 Post-Doctoral Research Fellowship, Faculty of Medicine, University of Edinburgh
1990 Sir Stanley and Lady Davidson Lectureship and Research Award, Faculty of Medicine, University of Edinburgh
1991 Sir Stanley and Lady Davidson Lectureship and Research Award, Faculty of Medicine, University of Edinburgh
1991 Post doctoral Fellowship/Assistant Instructorship with JI Mason funded from NIH Training Grant to Cecil and Ida Green Center, UTSW Medical center, Dallas TX
1996 R13 Travel Grant Recipient, Perinatal Research Society, Napa Valley, CA
1999 Awarded Competitive SGI Medical Student Stipend for Research in Reproduction Award for further work on "Effects of betamethazone on adrenal function", Student Jackie Cale, SGI
2001 Awarded Competitive SGI Medical Student Stipend for Research in Reproduction Award for further work on "zonal expression of eNOS in ovine adrenal", Student Jane Peterson, SGI
2004 SGI Presidents presenters award and NICHD competitive Travel stipend to FuXian Yi, Postdoctoral Trainee, SGI, NICHD
2005 Nominated Perinatal Research Society (PRS) Council, PRS
2007 Elected PRS Council. Basic Science Representative, PRS
2009 Elected Secretary Treasurer Perinatal Research Society, PRS
2012 Established and R13 funded the NIH-Abbott Grants Writing Workshop for PRS Young Investigators, PRS
2014 President Elect Perinatal Research Society, President for 2015-2016 year

C. Contribution to Science

1. My studies of endothelial adaptation to pregnancy began in 1994. The major breakthrough was the direct result of establishing the uterine artery endothelial cell (UAEC) culture model. While we initially observed that pregnancy altered the expression of key proteins responsible for vasodilator synthesis in uterine artery endothelium in vivo, the finding that these differences in expression were lost in primary culture, yet differences in vasodilator production still remained lead us to realize this was associated with additional pregnancy specific differences in cell signaling.
 - a. Bird IM, Sullivan JA, Di T, Cale JM, Zhang L, Zheng J, Magness RR. Pregnancy-dependent changes in cell signaling underlie changes in differential control of vasodilator production in uterine artery endothelial cells. *Endocrinology*. 2000 Mar;141(3):1107-17. PubMed PMID: [10698187](#).
 - b. Di T, Sullivan JA, Magness RR, Zhang L, Bird IM. Pregnancy-specific enhancement of agonist-stimulated ERK-1/2 signaling in uterine artery endothelial cells increases Ca(2+) sensitivity of endothelial nitric oxide synthase as well as cytosolic phospholipase A(2). *Endocrinology*. 2001 Jul;142(7):3014-26. PubMed PMID: [11416023](#).
 - c. Gifford SM, Cale JM, Tsoi S, Magness RR, Bird IM. Pregnancy-specific changes in uterine artery endothelial cell signaling in vivo are both programmed and retained in primary culture. *Endocrinology*. 2003 Aug;144(8):3639-50. PubMed PMID: [12865347](#).

2. Further investigation involving many of my Trainees have revealed that pregnancy altered both kinase signaling and Ca²⁺ signaling. Further, Ca²⁺ signaling was more sustained in duration and took the form of successive Ca²⁺ bursts (mediated via TRPC under the permissive control of Cx43). As a result, pregnancy literally recruited more cells into a synchronous response, and then sustained that response for much longer. However agents (growth factors and cytokines) that promoted ERK or Src mediated inhibitory phosphorylation of Cx43 could reverse that adaptation back to nonpregnancy levels.
 - a. Gifford SM, Yi FX, Bird IM. Pregnancy-enhanced Ca²⁺ responses to ATP in uterine artery endothelial cells is due to greater capacitative Ca²⁺ entry rather than altered receptor coupling. J Endocrinol. 2006 Aug;190(2):373-84. PubMed PMID: [16899570](#).
 - b. Gifford SM, Yi FX, Bird IM. Pregnancy-enhanced store-operated Ca²⁺ channel function in uterine artery endothelial cells is associated with enhanced agonist-specific transient receptor potential channel 3-inositol 1,4,5-trisphosphate receptor 2 interaction. J Endocrinol. 2006 Aug;190(2):385-95. PubMed PMID: [16899571](#).
 - c. Yi FX, Boeldt DS, Gifford SM, Sullivan JA, Grummer MA, Magness RR, Bird IM. Pregnancy enhances sustained Ca²⁺ bursts and endothelial nitric oxide synthase activation in ovine uterine artery endothelial cells through increased connexin 43 function. Biol Reprod. 2010 Jan;82(1):66-75. PubMed PMID: [19741206](#); PubMed Central PMCID: [PMC2802114](#).
 - d. Boeldt DS, Grummer MA, Yi F, Magness RR, Bird IM. Phosphorylation of Ser-279/282 and Tyr-265 positions on Cx43 as possible mediators of VEGF-165 inhibition of pregnancy-adapted Ca²⁺ burst function in ovine uterine artery endothelial cells. Mol Cell Endocrinol. 2015 Sep 5;412:73-84. PubMed PMID: [26033246](#). (In press- PMCID in process)
3. Our development of a simultaneous imaging method for Ca²⁺ and NO and its application to endothelium still on the luminal surface of intact vessels allowed us to directly observe that pregnancy enhanced Ca²⁺ bursts actively drive pregnancy enhanced NO output in ovine uterine artery. This adaptive response is exactly paralleled in Human Umbilical Vein Endothelium. We have more recently shown that growth factors and cytokines inhibit endothelial Cx43 function and so Ca²⁺ bursts and associated NO down to a level of nonpregnancy or preeclamptic vessel dysfunction in both vessel types, and the two dysfunctional states are indistinguishable.
 - a. Yi FX, Magness RR, Bird IM. Simultaneous imaging of [Ca²⁺]_i and intracellular NO production in freshly isolated uterine artery endothelial cells: effects of ovarian cycle and pregnancy. Am J Physiol Regul Integr Comp Physiol. 2005 Jan;288(1):R140-8. PubMed PMID: [15297265](#).
 - b. Yi FX, Boeldt DS, Magness RR, Bird IM. [Ca²⁺]_i signaling vs. eNOS expression as determinants of NO output in uterine artery endothelium: relative roles in pregnancy adaptation and reversal by VEGF165. Am J Physiol Heart Circ Physiol. 2011 Apr;300(4):H1182-93. PubMed PMID: [21239633](#); PubMed Central PMCID: [PMC3075018](#).
 - c. Krupp J, Boeldt DS, Yi FX, Grummer MA, Bankowski Anaya HA, Shah DM, Bird IM. The loss of sustained Ca(2+) signaling underlies suppressed endothelial nitric oxide production in preeclamptic pregnancies: implications for new therapy. Am J Physiol Heart Circ Physiol. 2013 Oct 1;305(7):H969-79. PubMed PMID: [23893163](#); PubMed Central PMCID: [PMC3798749](#).

For Full Publications List see:

<http://www.ncbi.nlm.nih.gov/myncbi/ian.bird.2/bibliography/43580851/public/?sort=date&direction=descending>

D. Research Support

Ongoing Research Support

2015/09/01-2019/08/31

U01 HD087216, NIH

Shah Dinesh (PI), Wieben Oliver (PI)

Advanced MRI FOR Uteroplacental Flow, Perfusion, Oxygenation & Inflammation
Role: Co-Investigator/Alternate PI

2015/04/01-2019/06/30
R13 HD036244, NIH
BIRD, IAN (PI)
Perinatal Research Society Annual Meeting
Role: PI

2014/05/01-2019/04/30
T32 HD41921, NIH
BIRD, IAN (PI)
Endocrinology and Reproductive Physiology Training Grant
Role: PI

2013/07/01-2018/06/30
P01 HD38843, NIH
BIRD, IAN (PI)
Importance of Endothelial Cell-Cell Communication at the Maternal Fetal Interface
Project Leader Project 1 Director Core A, Core C
Role: PI

2013/07/01-2018/06/30
R13 HD079163, NIH
BIRD, IAN (PI)
Perinatal Research Society YI Grants Writing Workshop
Role: PI

2012/05/01-2017/04/30
T32 HD049302, NIH
Gloria Sarto (PI)
Health Disparities Research Scholars
Role: Co-Investigator

2012/02/01-2017/01/31
R25, NIH
Mary Carnes (PI)
Training and Education to Advance Minorities in Science (TEAM-Science)
Role: Co-Investigator

Completed Research Support

2011/05/01-2016/04/30
R01 HL079020, NIH
BIRD, IAN (PI)
Pregnancy/NO Induced Changes in UAE Ca²⁺ Signaling
Role: PI

2009/07/01-2014/06/30

R01 HL093282, NIH

Murphy, William L (PI)

Biomaterials for local regulation of growth factor signaling

Role: Co-Investigator

2009/05/01-2014/04/30

T32 HD41921, NIH

BIRD, IAN (PI)

Endocrinology and Reproductive Physiology Training Grant

Role: PI

2011/07/01-2013/06/30

R21 HD069181, NIH

BIRD, IAN (PI)

Vascular Endothelial Dysfunction in Preeclampsia

Role: PI

2007/07/01-2012/06/30

RO1 HL087144, NIH

Magness, Ronald R (PI)

Physiologic Cardiovascular and Uterine eNOS responses: Role of Endogenous Estrogen in Pregnancy

Role: Co-Investigator

2007/04/01-2012/03/31

P01 HD38843, NIH

Magness, Ronald R (PI)

Mechanisms of Endothelial and Embryonic Stem Cell Regulation in Pregnancy

Project Leader project 1 Co-Director Core C

Role: CPI