**CURRICULUM VITAE**

**David Robert Bell, Ph.D.**

Associate Professor (Tenured)

Department of Cellular and Integrative Physiology

Indiana University School of Medicine

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**Personal Information**:

Married (Pamela), two children (Andrew and Elizabeth)

Home Address: 4704 Collbran Court, Fort Wayne, Indiana 46835

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**Academic Training**

1974 B.S. *Magna cum Laude* Physiology; Biology (dual major)

Michigan State University, East Lansing, Michigan

1977 M.S. Physiology

Michigan State University, East Lansing, Michigan.

Henry W. Overbeck, M.D., Ph.D., thesis advisor

1983 Ph.D. Physiology and Biophysics

 University of Alabama in Birmingham, Birmingham, Alabama.

Henry W. Overbeck, M.D., Ph.D., dissertation advisor.

1983‑

1986 Post‑doctoral Research Fellow (NIH awardee) Physiology

University of Michigan, Ann Arbor, Michigan.

David F. Bohr, M.D. and R. Clinton Webb, Ph.D. mentors

**David R. Bell, Ph.D.**

**I. OVERRVIEW OF ACCOMPLISHMENTS IN EDUCATION,**

**PROFESSIONAL SERVICE AND RESEARCH**

**Medical Education, Medical Writing and Medical Curriculum Development**

*Textbook Design, Development, Authorship and Editorship-*

*Medical Physiology: Principles for Clinical Practice,* RA Rhoades and **DR Bell,** editors.Wolters Kluwer/Lippincott, Williams and Wilkins, Amsterdam, Baltimore.

5th edition, 2016; 4th edition, 2013; 3rd edition, 2009.

Editorial oversight of all aspects of book production and supervision of co-authors and their product. Creation, development and publication of new features and pedagogical tools.

Chapter author for muscle physiology and cardiovascular physiology (7 chapters)

Co-chapter author for physiological principles, sensory physiology and renal physiology (3 chapters).

Development of student assessment tools: Chapter specific active learning objectives, chapter-based annotated (explained answers) review questions; advanced system specific and advanced integrated systems annotated problem solving exercises for muscle and CV physiology.

Creation of an instructor test bank, clinical application essays, integrated science essays, text glossary and computer based narrated animations.

*Core Concepts in Physiology,* **DR Bell**, Lippincott, Williams and Wilkins. Baltimore1998.

*De novo* creation of a unique condensed medical physiology textbook focusing on principles future physicians need to know using text and explanatory illustrations connections.

Created all text and illustrations in the book as sole author

*Human Physiology*, R. Pflanger and R. Rhoades eds. Tompson Publishing, San Fransisco 2003.

Chapter author of neurophysiology (3 chapters), Reproductive Physiology (2 chapters) and Sexual Physiology.

Tasked with replacing original author and re-writing overly complex previous chapter submissions on these topics to make them suitable for use by undergraduate biomedical students.

*Medical Writing Professional Certification Programs*

 Current enrollment, American Medical Writers Association Certificate Programs:

 Essential Skills Certificate; Research and Regulatory Affairs Certificate

 Workshops completed in- Medical Statistics, Epidemiology, Survival and End Point Analysis, Medical Writing Ethics, Sentence Structure and Design

*Textbook Professional Review*

National Chair for Physiology: Doody’s Review Services, Inc. 2015- present

Responsible for recruiting and supervising writers as well as personally creating reviews and ratings of all new physiology and physiology related textbooks created yearly worldwide. Reviews are used by medical librarians, hospital librarians, publishers and book sellers for decisions about which new text to add to their collection as well as by students, research scientists and instructors for their specific needs.

Physiology textbook reviews

1995- present. Provided professional academic reviews for medical physiology textbooks for Little, Brown and Company as well as Anatomy and Physiology textbook for McGraw-Hill

*Course Design, Development and Teaching*

Course Director Medical Physiology, Indiana University School of Medicine-Fort Wayne. 1989-present

Developed all lecture notes (650 pages), unique active learning objectives and media presentations for all areas of medical physiology for first year medical students, including all cell, neuro-muscular, cardiovascular, respiratory, renal, gastrointestinal and endocrine physiology as well as acid-base regulation, temperature regulation, metabolism and exercise physiology.

Wrote all practice assessments/formative assessments (500 practice questions) and all exam questions.

Delivery of all course lectures and other forms of instruction for all cell, neuro-muscular, cardiovascular, respiratory, renal, gastrointestinal and endocrine physiology as well as acid-base regulation, temperature regulation, metabolism and exercise physiology

Developer and facilitator for team based classroom medical physiology problem solving exercises for first year medical students.

Co-course Director Medical Pharmacology, Indiana University School of Medicine- Fort Wayne, 1991-present

Develop all lecture notes and media presentations for autonomic, CV, renal and GI pharmacology for second year medical students.

Delivery of all lectures in autonomic, CV, renal and GI pharmacology

Write all exam questions in autonomic, CV, renal and GI pharmacology.

Facilitator for student team based problem solving exercise (hypertension)

Cardiovascular and Hematology UDOS, IUSM-FW site director 2016- present.

Fundamentals of Health and Disease IUSM-FW site director, 2014- present.

 Developer, author and instructor- undergraduate web course in Human Diseases 2008- present

 Design, development and instruction for Cardiovascular Disease Section

*Medical School Curriculum Reform, Re-Design and Development*

Curriculum Reform 3.0- Cardiovascular and Hematology UDOS course (Understanding Diseases of Systems), Indiana University School of Medicine-

 Co-Chairman: Course Development Team 2013- ‘14

 Course Implementation and Management Team, 2016- present

 Chaired team of developers tasked with the creation of a new Cardiology and Hematology course for second year medical students at the IU School of Medicine.

 Development of course structure and educational pedagogy

 Team member of Committee of the Chairs of the 11 new courses for the new IUSM Phase I curriculum tasked with developing and organizing the first phase of medical education (18 months) leading.

 Implementation and Management Team for detailing course sessions and their management

Curriculum Reform 3.0-Fundamentals of Health and Disease,

 Indiana University School of Medicine-

 Course development team 2013-‘14

 Course Implementation and Management Team, 2014- present

Development of course structure and educational pedagogy for unique new fundamentals course for first year medical students at the IU School of Medicine. Course includes new instruction in neuromuscular, cardiovascular, respiratory and renal physiology, pharmacodynamics, pharmacokinetics, general pathology, cancer and evidence based medicine/medical statistics

 Development of new pedagogy and course organization

 Implementation and Management Team for detailing course sessions and their management

Member, Committee for Curriculum Reform Development, IU School of Medicine, Curriculum Reform 2.0, 2011-‘12

Committee was formed as preliminary effort for overhaul of the IUSM medical curriculum.

Study and conferencing with large numbers of other IUSM basic and clinical instructors, and scientists to investigate methods of instruction for using science to guide diagnosis, treatment, management and prevention in medical care of patients.

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 Team Leader, Using Science, Problem Solving and Lifelong Learning in the medical school curriculum, Indiana University School of Medicine- Curriculum Reform 1.0, 2010- ’11.

 Lead team tasked with investigating means by which instruction for using science, problem solving and lifelong learning skills could be incorporated into the new IUSM curriculum.

 *Medical School Administrative Committee Activity: Instruction and Course Oversight*

 Indiana University School of Medicine, Curriculum Council Steering Committee, member, 2016- present

 Development, oversight and evaluation of the IUSM curriculum

 Indiana University School of Medicine Curriculum Council member, Basic Sciences component, 1999- present

Evaluation and development of instructional policies and instructional modalities in the foundational sciences for the IUSM

 Member, Indiana University School of Medicine, Admissions Committee 2005- present

 Interview applicants for medical school

 Write medical school applicant evaluations

 Evaluate and vote with other committee members on admission of individual applicants to the IUSM

Member, Indiana University School of Medicine, Teacher-Learner Advocacy Committee, 2015

Committee of basic science and clinical instructors, and medical students for vetting of conflicts between instructors and students at the IUSM

 Medical Education Liaison to the IUSM for the IUSM-Fort Wayne Center, 2010- present

Member, Indiana University School of Medicine Dean’s Ad Hoc Committee for the AAMC Graduation Questionnaire Evaluation 2003- 2008

Complete evaluation of the questionnaire and student free responses in an effort to better understand areas of strength and weaknesses in student instruction and experiences in years 1-4 of medical school at the IUSM

 Indiana University School of Medicine, Academic Standards Committee 1993-'95.

Evaluation of student performance, course structure and course policies for all basic science courses at the

IUSM

Member, Indiana University School of Medicine, LCME Re-accreditation preparation committee for Student Services

 Evaluation of all IUSM student services in regards to LCME guidelines for the purpose of LCME accreditation

 Document/report preparation for above

 *Additional Past Teaching Activities*

Webinar Development and Presentation – *Preparing Students for a Career in Medicine- Challenges for the Physiology Student,* 2013

Development and presentation of a 1 hour webinar with online participation for medical students, medical school instructors and the Wolters Kluwer/Lippincott, Williams and Wilkins North American, European, Middle Eastern and African sales forces.

Instructor for Renal Physiology, IUSM-West Lafayette 2012

 Emergency replacement instructor for one of the IU School of Medicine instruction sites

Lecture and laboratory instructor for community college anatomy and physiology courses: Washtenaw Community College, Ann Arbor, MI. 1984 - ‘86

Physiology lab Instructor Department of Physiology, University of Michigan Ann Arbor, MI 1984

Cardiovascular physiology lectures University Alabama-Birmingham, School of Optometry1982

Medical Physiology and Dental Lab Instructor University of Alabama-Birmingham 1979- ‘83

Comparative Physiology lab instructor Michigan State University, 1974-‘76

 Recitation/laboratory instructor; undergraduate biology (ecology, cell biology, developmental biology): Michigan State University 1972 .

Training and development of 11 full time laboratory technicians in all aspects of my laboratory operations. 1989- present

Summer Research Student Training: S Cressman, 2009, J Burkett, 2006, B Gayed 2004, J Phillips 2002,, Huntington College, Dept of Chemistry

Health Careers Exploration Academy Fort Wayne- middle school 2007

Lutheran Foundation Summer High School Cardiovascular Camp 2004

Electrical Engineering 495, Bioengineering-

lectures in muscle and cardiac mechanics to senior engineering students ‘98

Medical Physiology, Indiana University, School of Medicine

Summer Remedial course, June ’95, June ‘12.

Howard Hughes Medical Careers Science Camp

IU School of Medicine, Fort Wayne, ‘98-‘00

High School senior mentorship and science fair projects, 4 students, 98-'99

Individual tutoring of medical and dental students

University of Alabama-Birmingham; University of Michigan.

Sponsorship and supervision for Michigan Heart Association summer student fellowship program and foreign medical student exchange research program

University of Michigan, Ann Arbor, Michigan 1984-‘86.

Sponsorship and supervision of student competition in Indiana Regional science Fair, 1997 (student selected for state and international fairs; 4th place finish at international fair 1997)

 Recruitment and training of laboratory technicians and work study students: University of Alabama-Birmingham; Indiana University. 1979- present

***Areas of Research Expertise by Experience and Training***

Basic Science Areas of Expertise

 Cardiovascular Physiology

 Cardiovascular Pharmacology

 Vascular Smooth Muscle Physiology/Pharmacology

 Hypertension

 Vascular Endothelium and Nitric Oxide Mechanisms

 Estrogen and steroid effects on vascular function

 Effects of anthocyanins and plant polyphenolics on vascular function

 Coronary and Intestinal circulations

Current areas of interest and recent activities

Evaluation of vasoactive, vasoprotective and anti-oxidant properties of berry polyphenolics and anthocyanins in isolated coronary arteries.

Analysis of the effect of biological solutions on anthocyanin stability and transformation. Analysis of mechanisms responsible for the protective effects of estrogen against oxygen radical mediated injury of coronary arteries.

Specific Areas of Research Expertise

 *In vitro analysis of vascular function in isolated arterial preparations*

 Analysis of the vasoactive, vasoprotective and anti-oxidant properties of berry polyphenolics, phenolic acids and anthocyanins.

 Analysis of modification of vascular oxidant injury, O2- load and NO production by polyphenolic compounds

 Analysis of vasoactive and vascular oxidant protective properties of *Acai* components

 Effects of estrogen and other sex steroids on coronary vascular reactivity and their role in protection against oxygen radical damage.

 Vascular effects of phytoestrogens.

 Endothelium dependent and independent vascular abnormalities in hypertension; effects of high pressure and altered fluid dynamics on vascular smooth muscle reactivity.

 Mechanisms of post‑serotonin attenuation in arterial smooth muscle.

 Fluid dynamics and vascular function/pathology.

Measurement of vascular intracellular Na+ content by Li+ substitution

 Vascular Na+/K+ pump activity by 86Rb+ uptake methods

 *In vivo systemic hemodynamics*

 *A*nalyses in the blood perfused intestinal vascular bed of dogs with chronic perinephritic hypertension

 *A*nalyses of hindlimb vascular bed of rats with chronic aortic coarctation hypertension

 Blood flow distribution in the hypertensive canine intestinal circulation with radioactive microspheres

*Coronary circulation and cardiac dynamics*

 *In vivo* analyses of blood flow velocity profiles by multi-gated Doppler velocimetry in the canine coronary circulation.

 *In vivo* determination of, myocardial oxygen consumption and intramyocardial pressure via intracardiac ultra-micro manometers in the dog

*Atherosclerosis*

Relationships between local hemodynamics and fatty streak development in hypercholesterolemic rabbits and human arterial system.

Past Collaborative Research Efforts

Evaluation of the vasoactive and vasoprotective effects of fruit anthocyanins and plant polyphenolics on coronary arterial function. w/ Artemis International, Inc. Fort Wayne, Indiana.

Evaluation of stability of berry polyphenolics. w/ R. Prior, Ph.D. USDA research laboratories, Little Rock, Arkansas, and w/ R Nalliah, Ph.D., Dept. of Chemistry Huntington University, Huntington, Indiana.

***Professional Service Summary – University Service***

 Course Director, Medical Physiology, Indiana University School of Medicine-Fort Wayne, 1989 - present.

 Co-Course Director, Medical Pharmacology, Indiana University School of Medicine-Fort Wayne, 2008- present

 Indiana University School of Medicine, Medical School Admissions Committee,

 2006- present

 IUSM Curriculum Council- Basic Sciences Component 1995-present

 IUSM Curriculum Reform Committees 1.0, 2.0, 3.0, 2011-present

 IUSM Teacher Learner Advocacy Committee, 2015

 IUSM-FW Committee for Merit Raise Document Development 2003

 Indiana University School of Medicine, FW tenure & promotion committee, '95- present

 IU School of Medicine, Physiology State Wide Test Bank Committee, '98-‘02

 IU School of Medicine, Physiology State Wide Test Bank Question Development:

 Chairman- Skeletal, Smooth and Cardiac muscle, Cardiovascular subcommittee; Renal Subcommittee, ‘98- ‘02

 IU School of Medicine, Committee for State Wide Physiology Retreat, ‘98

 IUSM-FW faculty representative to IPFW Faculty Senate, ‘89 - ‘94.

 IUSM-FW Anatomy and Histology Search and Screen Committee, 2014

 IUSM-FW Pharmacology Search and Screen Committee, ‘89 - ‘90.

 IUSM-FW Biochemistry Search and Screen Committee, ‘92 -‘93.

 Member, IU School of Medicine Committee for the Use of Animals for Medical Student Education, 1991.

***Professional Service Summary –***

***Non- University Service Related to Profession***

 Peer Reviewer- Journal Manuscripts

 American Journal of Physiology (Heart and Circulatory Physiology)

 American Journal of Physiology (Endocrinology and Metabolism)

 American Journal of Physiology (Regulatory, Integrative and Comparative Physiology)

 American Journal of Physiology - Advances in Physiological Education

 American Journal of Physiology - Journal of Applied Physiology

 American Heart Association Journals - Hypertension

 Journal of Vascular Research

 Journal of Biochemical Pharmacology

 Journal of Molecular and Cellular Biochemistry

 Journal of Pharmacy and Pharmacology

 Journal of the National Academy of Sciences

 Proceedings of the Society for Experimental Biology and Medicine

 Endocrine

 National Exam Reviewer

 National Board of Medical Examiners, Physiology Subject Exam draft questions review, 2006, 2012.

 Book Review Contracts Received

 National Chairmanship - Physiology- Doody’s Review Services, Inc. 2015

*Anatomy and Physiology, 5th ed,* R.R. Seely, T.D. Stephens, T.D., Tate, P, eds., McGraw Hill, 2000. 18 Chapters

*Noninvasive Vascular Technology*. Hemodynamics (½ of total book) Little, Brown and Company, Boston, MA, 1994.

*Medical Physiology* 2nd ed by R. Rhoades and G Tanner. Cardiovascular Section. Little, Brown and Company, Boston, MA, 1993.

*Physiology: Essentials Of Basic Science*, Cardiovascular section. Banks and N. Sperelakis Eds. Little Brown and Company, Boston MA, 1991.

 Grant Reviews

 American Heart Association, Indiana/Northeast Ohio consortium

 South Dakota Health Research Foundation

 Peer Competitive Abstract Reviews

 American Heart Association, National Meeting, Endothelium, 2000-2002

 Professional Business Consultantships and Paid Contracts

Jones and Bartlett Learning: *USMLE Pathways*- online story board development for medical student learning, assessment and performance monitoring geared to the USMLE, 2012

Welch’s Inc. Boston, MA: Research evaluation and marketing plan development, 2006- present

Artemis International, Inc. Fort Wayne, Indiana Research evaluation and grant development 1999 -present

***Professional Services Summary-***

***Community Service Related to Profession***

Parkview Hospital, Fort Wayne, Indiana, Institutional Review Board.

American Heart Association Allen County Board of Directors- President, Vice-President, Committee chairmanships

Media consultations, interviews and presentations-

 Fort Wayne- News Sentinel, WPTA-TV (Fort Wayne CBS), WFWA-TV(Fort Wayne PBS), WFFT-TV(Fort Wayne FOX), WKJG( NBC), WOWO radio, WBOI radio (Fort Wayne, NPR), also WFYI (Indianapolis, NPR);

 Three-30 minute Medical TV programs, three-30 minute radio programs, numerous interviews.

Governmental consultations –

 Fort Wayne City Council: concerning cardiovascular, anti-smoking ordinances and other health related issues.

 Testified before State of Indiana Governor’s Task Force on Tobacco Settlement Monies ’99.

 Testified before Fort Wayne City Council on Restaurant Smoking Ordinance ‘98

 Indiana Regional Science Fairs:

 Chairman, Scientific Review Committee, NE Indiana Regional Science and Engineering Fair, ‘99- 2003

 Adult supervisor, NE Indiana contingent, Indiana State Science and Engineering Fair ‘99

 Judge- Fort Wayne Region, Senior Biology Division, 1990-'92.

 Judge - Weisser Park elementary school, 1996, '97; St. Charles middle school (Fort Wayne) 1991-1994; St. Joseph elementary school (Garrett, IN), 1991-'92; Antwerp High School(Antwerp Ohio), 1993

Member-Exhibits Committee and Exhibits Review Committee, SCIENCE CENTRAL, Fort Wayne Indiana.

***National and Regional Organization Memberships and Leadership Positions***

 American Physiological Society

 American Medical Writers Association

 American Heart Association

 Institutional Review Board, Parkview Memorial Hospital, Fort Wayne, Indiana `97-2003

 American Heart Association-American Heart Walk Fort Wayne Committee 2002

American Heart Association, Fort Wayne- Chairman Operation Stroke 2000-2003

American Heart Association, Midwest Regional Task Force on Primary and Secondary Prevention ‘99 -‘00, National 10 year goal paper

 American Heart Association, Allen County Board of Directors, President ‘98-'99,

 American Heart Association, Allen County Board of Directors Vice-President ‘97-'98

 American Heart Association, Allen County Board of Directors 1995- 2003

 American Heart Association, Midwest regional Advocacy Committee ‘97- 2003

***Professional Honors***

American Heart Association, NE Indiana, Research Star Award, 2007

Indiana University School of Medicine top 10% teaching evaluation (all courses)

Indiana University, Board of Trustees, *Excellence in Teaching Award*, 1999

Associate Professor of Physiology and Biophysics with tenure, Indiana University School of Medicine, 1995

NIH National Research Service Award, 1985 - ‘87

NIH Pre‑doctoral Fellowship, 1975

B.S. Magna Cum Laude, Michigan State University, 1974.

Michigan State University Trustee Scholarship, 1970 ‑ 1972

***Professional Society Memberships***

American Physiological Society- Regular Member

American Medical Writers Association

American Heart Association- Council on Circulation, Member

***Invited Professional Seminars, Webinars and Presentations***

“Preparing Students for Careers in Medicine: Challenges for the Physiology Student”, International Webinar: North American, European, Middle Eastern and African professional educators and LWW sales forces, Lippincott, Williams and Wilkins, May, 2012

“Anthocyanin enriched berry extracts produce endothelium dependent vasorelaxation in coronary arteries and protect vascular endothelium from oxygen radical mediated injury.” American Chemical Society, Annual Meeting, Philadelphia, PA Aug 17-21, 2008

“Concord grape juice and cardiovascular health.” New York Wine and Grape Association Media Symposium, Canandaigua, NY, Oct 13-14, 2007

“Total phenolic content of anthocyanin-enriched extracts reduces reactive oxygen species generated from the xanthine:xanthine oxidase reaction. Mini-Symposium American Society of Nutritional Sciences: Chronic Disease: Bioactive Food Components. Experimental Biology 2006

“Differential vasoactive and vasoprotective effects in coronary arteries following exposure to berry polyphenolics.” Mini-Symposium American Society of Nutritional Sciences: Dietary Bioactive Compounds: Modulation of Physiological Processes II. Experimental Biology 2005 and the XXXV International Congress of Physiological Sciences. 4 April, 2005

“Vasoactive, Vasoprotective and Anti-Oxidant Properties of Novel Berry Polyphenolic Compounds in Porcine Coronary Arteries.” Indiana University, Medical Sciences Program, Bloomington, Indiana , 29 November, 2004

“Anti-Oxidant Defense Properties of Berries”, 90 minute presentation. Alberta Horticultural Congress, November 14-15, 2002, Edmonton, Alberta.

 “Sex, Steroids and Heart Attacks: Potential consequences of exposure of coronary arteries to estrogen, progesterone and phytoestrogens.” Presented to the University of South Dakota, School of Medicine, March 22, 1999.

 “Sex, steroids and your heart: new insights into the effects of estrogens on coronary arterial function.” Presented to the Indiana University, School of Medicine, Department of Physiology, April 30, 1999

“Sex Steroids and Heart Attacks: Effects of estrogen and progesterone on the behavior of coronary arteries", IPFW Department of Biology Seminar Series, September26, 1997

"National research in CHF Today". AHA-Northeast Indiana Nurses Symposium on Congestive

 Heart Failure. March 25, 1997

 “Sex steroids and your heart: New insight into the effects of estrogen and progesterone on the behavior of coronary arteries.” Departments of Anatomy, Physiology and Pharmacology, Purdue University School of Veterinary Medicine, West Lafayette, IN. October 4, 1995.

“The role of high arterial pressure in vascular abnormalities associated with hypertension.” Department of Clinical Pharmacology, IU School of Medicine, Indianapolis, IN, May 17, 1994.

“Alterations of vascular function by high arterial pressure in chronic hypertension.” Evansville

Center for Medical Education, IU School of Medicine, Evansville, IN, April 15, 1994.

“The role of high arterial pressure in vascular abnormalities associated with hypertension.” Northwest Center for Medical Education, IU School of Medicine, Gary, IN, October 4, 1991.

"The influence of pressure on vascular abnormalities associated with hypertension", Department of Physiology and Biophysics Seminars program, IU School of Medicine, Indianapolis, April 18, 1990.

"The influence of pressure on vascular abnormalities associated with hypertension", IPFW Research/Journal Club, October, 1989.

“The role of high arterial pressure in vascular abnormalities associated with hypertension.” Department of Physiology, School of Veterinary Medicine, University of Georgia, Athens, GA 1989

“The role of high arterial pressure in vascular abnormalities associated with hypertension.” Indiana University School of Medicine Fort Wayne Center for Medical Education 1988

“The role of high arterial pressure in vascular abnormalities associated with hypertension.” Indiana University School of Medicine Terre Haute Center for Medical Education 1988

 “The role of high arterial pressure in vascular abnormalities associated with hypertension.” Department of Physiology. University of North Dakota, 1988"

***Invited Community Seminars and Presentations***

“Anti-Oxidant Berry Research”, *Sound Medicine,* WFWI and the Indiana University School of Medicine, NPR radio program, October 18, 2003

 “Stroke: Prevention, Causes, Symptoms and Treatments.” AHA Stroke Awareness Seminar, DuPont Hospital, Fort Wayne, IN, May 2003

 **“**Research advances and Cardiovascular Disease”, *IPFW Up Close* hosted by Melissa Long, news anchor, WPTA TV21(ABC)30 minute program1999

"Aspirin and the risk of stroke “, WPTA TV15 (CBS), Fort Wayne, Indiana, September 1999

“Stroke”, WAJI radio Fort Wayne, *Sunday Side UP,* 30 min. talk show with Jenelle Berry, May 20, 1999

“Stroke; Symptoms, Risks, Response and Recovery “, 30 min. *Fox Sunday Morning* talk show WFFT, TV55(FOX), Fort Wayne, IN May 5,1999

"New advances in cardiovascular research", WPTA TV15 (CBS), Fort Wayne, Indiana, February 1999

“AHA Heart Month” WKJG TV33(NBC), interview with Dick Florio, manager, February 1999

"Understanding Women and Heart Attacks", nationally syndicated PBS program produced by WFWA, TV39, Fort Wayne, Indiana, October, 1998

"Research and the American Heart Association", AHA, Allen County Heart Walk Kickoff, captains meeting, August, 1998

"Causes and New Treatments for Hypertension", Hicksville, Ohio Senior Center, May, 1998

"Steroids, Menopause and Heart Attacks", Hicksville Ohio Senior Center, March, 1998

"Hypertension", Interview/discussion with Linda Jackson, new anchor, WKJG TV33 (NBC), May, 1998.

“The Research Grant Process of the American Heart Association- Indiana Affiliate: Where does a Million Dollar Go and What do Scientist Have to Do to Get it?" Adams County Heart Club, 9-25-97, repeated 11-18-97 for AHA-Indiana Northeast Region Board of Directors meeting.

"Heart Attack Research". Healthline 39; WFWA TV PBS channel 39, Fort Wayne IN, live TV call in talk show. 2-1-1996.

"Sex, Steroids and Your Heart: New insights into the effects of estrogen and progesterone on the function of coronary arteries." Georgetown Place, Fort Wayne, 4-22-96.

"Hypertension: Consequences, treatment and current research." Towne House, Fort Wayne, IN, 5-16-1996.

"Current Advances in Cardiovascular Research", Trinity English Lutheran Church Rebecca Circle, 9-18-1996.

Health presentations in cardiopulmonary physiology, Temperature regulation and to: St Joseph

Elementary School, Garrett Indiana, 4th grade, 1991, 4th -6th grade 1992; Arlington Elementary School, Fort Wayne, 2nd grade, 1991; Pine Hill Nursery School, Fort Wayne, 1991; Weisser Park Elementary School grades 1-4, 1992-1994.

**II. EMPLOYMENT**

**Professional Positions Held**

1. Employer: Indiana University School of Medicine, Fort Wayne Center for Medical Education, Fort Wayne, Indiana

 Period: August, 1989 – present

 Position: Assistant Professor Physiology and Biophysics 1989-1995, Associate Professor 1995-present, Tenured, 1996

Duties:

Teaching-

Course director *- Medical Physiology,* IUSM-FW:

Lecture and laboratory instructor for entire first year medical physiology course. Write/develop all student lecture notes (600 pages), active applied learning objectives for each lecture, summative unit exams, formative/practice exam assessments, in class team based problem solving sessions, PowerPoint presentations and all lectures. Lecture topics include homeostasis, membrane transport, neuromuscular, cardiovascular, respiratory, renal/electrolyte and gastrointestinal physiology as well as water, electrolyte and acid-base balance, hemostasis, mechanisms of hormone action, endocrine control of calcium/phosphate metabolism and regulation of body temperature. Develop laboratory exercises and institute computer aided laboratory instruction. Laboratory topics include muscle mechanics, human ECG, blood pressure and heart sound analysis, CV physiology, pulmonary gas diffusion principles and acid-base analysis. Hold weekly lecture and exam review sessions. Evaluate student performance/ report to school promotions committee. Provide conference services to first year medical students. Direct summer remediation in Medical Physiology (1995)

Co-Course Director- *Medical Pharmacology*, IUSM-FW:

Instructor for cardiovascular, autonomic, renal and gastrointestinal pharmacology Write/develop lecture notes, PowerPoint presentations and exams. , and provide conference services to second year medical students. Lecture topics include anti-hypertensive therapy, nitrovasodilators and the treatment of angina, calcium channel blockers, anti-dysrhythmic agents, drug treatment of heart failure, cholinergic agents, adrenergic agents, ACE inhibitors, ARBs, Renin inhibitors, diuretics, AVP agents, GI motility agents, drug treatment of gastric acid disorders, anti-emetics, anti-diarrheal and laxative agents.

Medical Physiology Textbook development, editor and author:

Editor and primary author for two Medical Physiology textbooks-

 Write muscle and all CV physiology chapters; re-design older versions of textbook to include active applied learning objectives, descriptive statement subtitles, annotated chapter review questions, instructor test bank, updated figures and text. Develop 16 medical case studies circumscribed to single chapter material. Develop 8 medical case studies integrating multiple physiological principles. Develop computer based animations for cell electrophysiology, neurophysiology, cardiac mechanics and renal counter current multiplier. Work with chapter contributing authors, graphic artists and publisher editors to manage production a full textbook in accordance with contract guidelines and deadlines.

Author and Developer, Medical Physiology Core Concepts textbook:

Development of a unique medical physiology course companion text designed to reduce typical medical physiology volumes of near 1000 pages to 120 pages of essential content that is designed to provide students with “what every future physician should know in physiology”. Wrote the entire volume and created all figures for this text.

Co-author for undergraduate human physiology textbook:

Wrote 6 chapters dealing with neurophysiology, reproductive physiology and sexual physiology.

Development of web based course material:

Developed online material and assessments for the cardiovascular disease unit for an online undergraduate course in human disease for non-science majors.

Lecture instructor for IPFW-Purdue bioengineering EE495:

Developed materials and gave lectures on muscle and cardiac mechanics to engineering students

Elementary, Middle and High School enrichment programs:

Howard Hughes Medical Careers Summer Science Camp; Lutheran Foundation of Indiana Summer High School Summer Cardiovascular Camp; Health Careers Exploration Academy*,* Fort Wayne; Science Central Science Museum, Fort Wayne; Scout Explorer Career Explorations; numerous elementary schools presentations. Presentations and hands on activities for elementary to high school students including underprivileged students in general health, cardiovascular, pulmonary biology and medical careers

Sponsor summer research students:

 Instruction in research techniques, experimental design, data/statistical analysis, professional manuscript writing, oral presentations and poster presentations. 3 students

Training laboratory technicians:

 Instruction in research techniques, data collection, record keeping, lab maintenance, data presentation for professional PI presentations.

Research-

Responsible for running own laboratory and research program. Design and conduct experiments to evaluate the vasoactive, vasoprotective and anti-oxidant properties of novel berry anthocyanins and polyphenolic compounds. Develop analyses for evaluating oxidant injury in isolated arteries. Develop analyses for the detection of superoxide and nitric oxide in isolated coronary arteries. Design and conduct experiments to evaluate the effects of physiological levels of estrogen, progesterone, and phytoestrogens on coronary arterial reactivity and anti-oxidant defense. Design and conduct experiments to investigate the role of high arterial pressure in altered vascular sensitivity associated with chronic hypertension: influences on endothelium dependent and independent vasorelaxation, nitric oxide and cyclic nucleotide mediated vasorelaxation, calcium sources in vascular contraction. Collaborative research efforts include evaluation of stability of anthocyanins in biological solutions

Service:

University service includes membership and two chairmanships of IUSM curriculum reform teams formed to design an entirely new medical school curriculum for years 1-4 at the IUSM; included Curriculum Reform Teams 1.0, 2.0, 3.0 (chair for Cardiovascular and Hematology subcommittee for CR 3.0 and basic science subcommittee competencies for CR 1.0)

IU School of Medicine Medical School Admissions Committee- interview, evaluation and selection of applicants to the IU School of Medicine

IU School of Medicine AAMC graduation exit questionnaire task force.-

Evaluate IUSM student comments on IUSM curriculum and medical school experience

IU School of Medicine Academic Standards Committee.-

Evaluate student performance and performance of academic units within the IUSM

Member, IU School of Medicine Curriculum Council-Basic Science Component-

Evaluate policies and make recommendations concerning basic science courses and curriculum.

Member, IU School of Medicine Teacher Learner Advocacy Committee

Member, Pharmacology Search and Screen Committee.

Member, IU School of Medicine -FW Tenure and Promotion Committee.

Member, two IUSM-FW Biochemistry Search and Screen committees.

Member IU School of Medicine Committee for use of animals in medical school teaching.

Member committee for State wide physiology retreat.

Co-ordinator for IU School of Medicine Physiology test bank- development in state wide test bank questions in physiology

Parkview Hospital, Fort Wayne, Institutional Review Board.

Senior mentor for high school students and high school science projects.

High School Job Day sponsor.

Community seminar, television, radio, newspaper and city council presentations in biomedical research.

Physiology presentations to elementary school children.

Regional science fair judge.

IUSM-FW representative to the IPFW faculty senate.

Member Exhibits Committee and Exhibits review committee for Science Central (Fort Wayne hands on science museum)

American Heart Association- Board of Directors and Allen County President and Vice-president. Member, Chairman- Operation Stroke.

2. Employer: Henry Ford Hospital, Cardiovascular Research Division, Heart and Vascular Institute, Detroit, Michigan (Paul D. Stein, M.D., division head)

 Period: November, 1986 ‑ August 1989

 Position: Assistant Staff Investigator

Duties:

Design and conduct experiments to investigate:

 1) influences of acute and chronic changes in flow and shear stress on vascular reactivity in vitro.

 2) effects of flow rate on altering blood flow velocity profiles in coronary arteries.

 3) relationships between intramyocardial pressure and myocardial oxygen consumption.

 4) altered hemodynamics and fatty streak development of hypercholesterolemic rabbits.

5) relationships between secondary flow patterns and contours of atherosclerotic development in human aortae.

 Responsible for all aspects of all studies.

3. Employer: University of Michigan, Department of Physiology, Ann Arbor, Michigan

 Period: September, 1983 ‑ October, 1986

 Position: Post‑doctoral Research Fellow (NIH Research Fellow 1/85‑10/86; 2 years) David F. Bohr, M.D., Sponsor; R. Clinton Webb, Advisor.

Duties:

Design and conduct experiments to investigate:

 1) the role of pressure in abnormalities of vascular smooth muscle function associated with coarctation hypertension in the rat.

 2) mechanisms of individualities in post‑serotonin attenuation in rabbit arteries.

 3) coronary artery reactivity in DOCA hypertensive pigs using isolated large and small arterial strips and in vivo hemodynamic techniques.

 Responsible for all aspects of all studies.

Supervise and sponsor student research projects (foreign exchange program and Michigan Heart Association summer student research fellowship). Attend and contribute to weekly laboratory and student research meetings. Contribute to routine monitoring of metabolic and hemodynamic variables in chronic DOCA hypertensive pigs and sheep. Minor teaching duties in the laboratory section of the medical and dental school physiology courses. Tutor dental school physiology.

4. Employer: Washtenaw Community College, Ann Arbor, Michigan (James Davenport, M.S. Chairman Life Sciences)

 Period: September, 1984 ‑ May, 1985

 Position: Part‑time instructor, substitute instructor

Duties: Lecture and laboratory instruction in Anatomy and Physiology and Human Biology courses. Write and grade examinations.

5. Employer: University of Alabama in Birmingham, Department of Anesthesiology, Birmingham, Alabama (Simon Gelman, M.D., supervisor)

 Period: June, 1983 ‑ September, 1983

 Position: Part‑time, temporary research associate

Duties: Conduct experiments on the effects of inhalation anesthetics on intestinal hemodynamics and metabolism (blood flow, vascular resistance, oxygen consumption, shunt flow)

6. Employer: University of Alabama in Birmingham, Department of Physiology and Biophysics, Birmingham, Alabama (Henry W. Overbeck, M.D., Ph.D., dissertation advisor)

Period: January, 1979 ‑ June, 1983

Position: Graduate Assistant

Duties:

Design and conduct experiments to examine the mechanisms underlying intestinal hyperemia in dogs with chronic perinephritic hypertension; examination of total and regional vascular resistances, tissue O2 consumption, local blood flow regulation, shunt flow via radioactive microspheres, structural component of vascular resistance. Examine intra ocular pressure abnormalities in the same dogs. Responsible for all aspects of all studies. Recruit, train and supervise laboratory technical personnel. Teaching assistant for medical school physiology laboratory. Tutor for medical school physiology. Lecture in cardiovascular physiology section of physiology for optometry.

7. Employer: University of Wisconsin, Department of Physiology, Madison, Wisconsin (Neville Bittar, M.D., advisor)

Period: June, 1977 ‑ December, 1978

Position: Graduate Assistant

Duties: Conduct experiments in myocardial ischemia/coronary circulation of anesthetized dogs.

8. Employer: Michigan State University, Department of Physiology, East Lansing, Michigan (Henry W. Overbeck, M.D., Ph.D. thesis advisor

 Period: September, 1974 ‑ June, 1977

 Position: Graduate Assistant

Duties: Conduct experiments on hindlimb hemodynamics in rats with chronic coarctation hypertension; isolated hindlimb perfusions. Responsible for all aspects of the study. Responsible for setting up and testing experiments for senior level comparative physiology laboratory (one term).

9. Employer: Michigan State University, Lyman Briggs College, East Lansing, Michigan (Howard Hagerman, Ph.D. supervisor)

 Period: January, 1973 ‑ June, 1974

 Position: Undergraduate Teaching Assistant-Biology

Duties:

Assist undergraduate students with lecture and laboratory material from three biology courses (ecology, cell biology and developmental biology); answer questions, hold discussion sessions, write and grade quizzes.

**III. Publications**

**Publications in Education**

*Textbooks*

*Medical Physiology*: *Principles for Clinical Practice, 5th edition.* RA Rhoades and **DR Bell**, editors, Wolters Kluwer/Lippincott, Williams and Wilkins, Baltimore, 2016

*Medical Physiology*: *Principles for Clinical Practice, 4th edition.* RA Rhoades and **DR Bell**, editors, Wolters Kluwer/Lippincott, Williams and Wilkins, Baltimore, 2013

*Medical Physiology*: *Principles for Clinical Practice, 3rd edition.* RA Rhoades and **DR Bell**, editors, Wolters Kluwer/Lippincott, Williams and Wilkins, Baltimore, 2009

*Core Concepts in Physiology*. **Bell DR.** Lippincott-Raven, Philadelphia, New York, 1998.

*Textbook Chapters:*

**Bell DR** . Skeletal and smooth muscle. In: *Medical Physiology: Principles for Clinical Practice, 5th edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2016

**Bell DR** . An overview of the cardiovascular system and hemodynamics*.* In: *Medical Physiology: Principles for Clinical Practice, 5th edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2016

**Bell DR** . The electrical activity of the heart*.* In: *Medical Physiology: Principles for Clinical Practice, 5th edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2016.

**Bell DR** . Cardiac muscle mechanics and the cardiac pump*.* In: *Medical Physiology: Principles for Clinical Practice, 5th edition, 4thedition 3rd edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2016

**Bell DR** . The systemic circulation*.* In: *Medical Physiology: Principles for Clinical Practice, 5th edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2016.

**Bell DR** . The microcirculation and lymphatic system*.* In: *Medical Physiology: Principles for Clinical Practice, 5th edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2016

**Bell DR** . Special circulations*.* In: *Medical Physiology: Principles for Clinical Practice, 5th edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2016

 **Bell DR** . Control mechanism in circulatory function. In: *Medical Physiology: Principles for Clinical Practice, 5th edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2016

 **Bell DR** and RA Roades, An introduction to the principles of physiology In: *Medical Physiology: Principles for Clinical Practice, 5th edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2016.

 **Bell DR** and RA Roades, Kidney Function In: *Medical Physiology: Principles for Clinical Practice, 5th edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2016.

 **Bell DR** and RA Roades, Regulation of fluid and electrolyte balance. In: *Medical Physiology: Principles for Clinical Practice, 5th edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2016.

 **Bell DR** and RA Roades, Acid-base balance. In: *Medical Physiology: Principles for Clinical Practice, 5th edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2016.

 **Bell DR** . Skeletal and smooth muscle. In: *Medical Physiology: Principles for Clinical Practice, 4th edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2012

**Bell DR** . An overview of the cardiovascular system and hemodynamics*.* In: *Medical Physiology: Principles for Clinical Practice, 4thedition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2012

**Bell DR** . The electrical activity of the heart*.* In: *Medical Physiology: Principles for Clinical Practice, 4thedition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2012

**Bell DR** . Cardiac muscle mechanics and the cardiac pump*.* In: *Medical Physiology: Principles for Clinical Practice, 4thedition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2012

**Bell DR** . The systemic circulation*.* In: *Medical Physiology: Principles for Clinical Practice, 4thedition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2012

**Bell DR** . The microcirculation and lymphatic system*.* In: *Medical Physiology: Principles for Clinical Practice, 4thedition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2012

**Bell DR** . Special circulations*.* In: *Medical Physiology: Principles for Clinical Practice, 4th edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2012

 **Bell DR** . Control mechanism in circulatory function. In: *Medical Physiology: Principles for Clinical Practice, 4th edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2012

 **Bell DR**, Rhoades RA. Sensory Physiology. In: *Medical Physiology: Principles for Clinical Practice, 4th edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2012

**Bell DR** . An overview of the cardiovascular system and hemodynamics*.* In: *Medical Physiology: Principles for Clinical Practice, 3rd edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2008

**Bell DR** . The electrical activity of the heart*.* In: *Medical Physiology: Principles for Clinical Practice, 3rd edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2008

**Bell DR** . Cardiac muscle mechanics and the cardiac pump*.* In: *Medical Physiology: Principles for Clinical Practice, 3rd edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2008

**Bell DR** . The systemic circulation*.* In: *Medical Physiology: Principles for Clinical Practice, 3rd edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2008

**Bell DR** . The microcirculation and lymphatic system*.* In: *Medical Physiology: Principles for Clinical Practice, 3rd edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2008

**Bell DR** . Special circulations*.* In: *Medical Physiology: Principles for Clinical Practice, 3rd edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2008

**Bell DR** . Control mechanism in circulatory function. In: *Medical Physiology: Principles for Clinical Practice, 3rd edition.* RA Rhoades and **DR Bell**, editors, Lippincott, Williams and Wilkins, Baltimore, 2008

**Bell DR**Motor Systems*,* In: *Human Physiology 4th edition*, R Pflanger and R Rhoades, eds, Thompson Publishing, Philadelphia. 2002

**Bell DR**The Autonomic Nervous System*,* In: *Human Physiology 4th edition*, R Pflanger and R Rhoades, eds, Thompson Publishing, Philadelphia.2002

**Bell DR**Central Integrative Systems*,* In: *Human Physiology 4th edition*, R Pflanger and R Rhoades, eds, Thompson Publishing, Philadelphia.2002

**Bell DR**Reproductive Physiology*,* In: *Human Physiology 4th edition*, R Pflanger and R Rhoades, eds, Thompson Publishing, Philadelphia. 2002

**Bell DR**Pregnancy, Fetal Development and Lactation*,* In: *Human Physiology 4th edition*, R Pflanger and R Rhoades, eds, Thompson Publishing, Philadelphia. 2002

**Bell DR**Sexual Physiology*,* In: *Human Physiology 4th edition*, R Pflanger and R Rhoades, eds, Thompson Publishing, Philadelphia.2002

*Online Resources, Databases and Textbook Supplements*

Medical Physiology: *Integrative Physiology Case Studies with questions and explained answers*. (8 cases) In: *ThePoint*, online student resource companion for *Medical Physiology: Principles for Clinical Practice,* Lippincott, Williams and Wilkins.2012, 2016.

Medical Physiology: Skeletal and Smooth Muscle Case Studies *with questions and explained answers*. (2 cases). In: *ThePoint*, online student resource companion for *Medical Physiology: Principles for Clinical Practice,* Lippincott, Williams and Wilkins.2012, 2016.

Medical Physiology: Cardiovascular Case Studies *with questions and explained answers*. (14 cases). In: *ThePoint*, online student resource companion for *Medical Physiology: Principles for Clinical Practice,* Lippincott, Williams and Wilkins.2009, updated 2012, 2016.

Medical Physiology: Cardiovascular and Muscle Annotated Student Review Question and Answer Bank (8 chapters). In: *ThePoint*, online student resource companion for *Medical Physiology: Principles for Clinical Practice,* Lippincott, Williams and Wilkins.2009, updated 2012, 2016.

Medical Physiology: *Cardiovascular Instructor Exam Question Bank*; In: *ThePoint*, online instructor resource companion for *Medical Physiology: Principles for Clinical Practice,* Lippincott, Williams and Wilkins.2009, 2016.

Medical Physiology: *Cardiovascular and Muscle Glossary*; In: *ThePoint*, online student resource companion for *Medical Physiology: Principles for Clinical Practice,* Lippincott, Williams and Wilkins.2009, updated 2012, 2016

Medical Physiology: *Computer Flash Animations with Narration*- Ionic equilibrium and resting membrane potential, Nerve action potentials, Cardiac mechanics, Loading and Inotropic effects on cardiac mechanics, Renal counter-current multiplier; In: *ThePoint*, online student resource companion for *Medical Physiology: Principles for Clinical Practice,* Lippincott, Williams and Wilkins.2009, 2012, 2016.

*Cardiovascular Disease,* In: Bio127 Human Diseases- An online web course module. Online course instruction and assessment for undergraduate non science majors. Purdue University and IPFW, 2008-2013.

**Research Publications**

*Full‑Length Peer Reviewed Manuscripts*

**DR Bell**. Vasoactive and Vasoprotective Anti-Oxidant Properties of Anthocyanin Enriched Berry Extracts, in *ACS Symposium Series. Flavor Chemistry and Health Benefits of Small Fruits*, A. Rimando and M. Qian, eds. American Chemical Society, 2009

Nalliah, RE, JS Phillips, AJ Gaier, FL Jones, KE Gochenaur, **DR Bell (corresponding author).** Experimental *in vitro* arterial reactivity and tissue culture solutions alter the time dependent stability of anthocyanins from elderberry, chokeberry and bilberry extracts. Int J Food Sci Nutr 60: 209-219, 2009.

**Bell DR**, K Gochenaur. Direct vasoactive and vasoprotective properties of anthocyanin-rich extracts. J Appl Physiol 100: 1164-1170, 2006

Vilensky, J.A., **DR Bell** and S. Gilman. “*An investigation of the nervous control of defecation*” by Denny-Brown and Robertson: A classic paper revisited. Colorectal Disease 6:376-383, 2004.

Vilensky, J.A., **DR Bell** and S. Gilman. ‘‘On the physiology of micturition’’ by Denny-Brown and Robertson: a classic paper revisited. Urology 64: 182-186, 2004.

**Bell DR** , Gochenaur KE, Hecht J. O2--mediated impairment of coronary arterial relaxation is prevented by overnight treatment with 1 nM beta-estradiol J Appl Physiol 93: 1952-1958, 2002.

**Bell DR**, JA. Vilensky. Making a Case for Science*,* New Physician: 49(9), 2, 2000.

**Bell DR**, Dec EM, Rensberger HJ. Selective effect of high arterial pressure in hypertension upon inhibition cGMP and cAMP mediated vascular relaxation. Clin Exp Hyperten 18:773-791, 1996.

**Bell DR,** Rensberger HJ, Koritinik DR, Koshy AG. Noradrenergic vasorelaxation of porcine coronary arteries is enhanced by direct, acute exposure to 17ß-estradiol. Gen Pharmac 26:1289-1294, 1995.

**Bell DR**. Effect of chronic high pressure on transient and tonic vascular contractions to serotonin in hypertension. Am J Hypertens 8:365-374, 1995.

**Bell DR**, Rensberger HJ, Koritinik DR, Koshy A. Endothelium-dependent, NO-mediated vasorelaxation of porcine coronary arteries is potentiated directly by pretreatment with estrogen. Am J of Physiol 268(Heart Circ Physiol 37):H377-H383, 1995.

**Bell DR.** Vascular smooth muscle responses to endothelial autacoids in rats with chronic coarctation-hypertension. J Hyperten 11:65-74, 1993.

Rankin GW, **Bell DR**, Sabbah HN, Stein PD. Comparison of experimental and theoretical velocity profiles in the abdominal aorta. In: Physiological Fluid Dynamics. Ed by NVC Swamy and M Singh, Narosa Publishing House, Madras India, 1992, pp149-156.

**Bell DR**, Bohr DF. Endothelium in functional aortic changes of coarctation hypertension. Am J Physiol 260(Heart Circ Physiol 29): H1187-H1193, 1991.

**Bell DR**, Sabbah HN, Stein PD. Fatty steak development in the vicinity of aortic coarctations in hypercholesterolemic rabbits. Biorheology 27:645-657, 1990.

**Bell DR**, Bohr DF. Individualities in post‑serotonin attenuation and Na+/K+ pump activity in vascular smooth muscle. Eur J Pharmacol 171:189-199, 1989.

**Bell DR**, Sabbah HN*,* Stein PD: Areas of high shear show sparing of lipid deposition in hypercholesterolemic rabbits with constricted aortas. Proceedings, 2nd International Symposium on Biofluid Mechanics and Biorheology in Large Blood Vessels. Leipsch D (ed.), pp. 311-330, 1989.

**Bell DR**, Sabbah HN, Stein PD. Profiles of velocity in the coronary arteries of dogs indicate lower shear rate along the inner arterial curvature. Arteriosclerosis 9:167‑175, 1989.

**Bell DR**, Stein PD. High flow attenuates relaxation by acetylcholine in isolated perfused canine femoral arteries. Heart and Vessels 4:14‑18, 1988.

**Bell DR**, Hollingsworth SF, Overbeck HW: Decreased intra ocular pressure in dogs with one‑kidney, one‑wrapped hypertension. Hypertension 10:152‑156, 1987.

**Bell DR**, Webb RC, Bohr, DF: Functional bases for individualities among vascular smooth muscles. J Cardiovasc Pharmacol 7(suppl 3):S1‑S11, 1985.

**Bell DR**, Overbeck HW: Intestinal hemodynamics in dogs with chronic one‑kidney, one‑wrapped hypertension. Am J Physiol 249:H300‑H308, 1985.

Overbeck HW, **Bell DR**, Grissette DE, Brock TA: Function of the sodium pump in arterial smooth muscle in experimental hypertension. Hypertension 4:394‑399, 1982.

**Bell DR**, Overbeck HW: Increased resistance and impaired maximal vasodilation in normotensive vascular beds of rats with coarctation hypertension. Hypertension 1:78‑83, 1979.

*Additional Completed Studies for publication*

**Bell DR**, J Hecht and KE Gochenaur. Characteristics of vasorelaxation of porcine coronary arteries by cyandin glycosides.

**Bell DR** and KE Gochenaur**.** Free radical injury to coronary arteries following inhibition of SOD is attenuated by exposure to berry polyphenolics

**Bell DR**, R Raval, V, Bryant. Attenuation of estradiol mediated enhancement of endothelium-dependent relaxation of porcine coronary arteries following exposure to the phytoestrogen coumestrol.

**Bell DR,** Rensberger HJ. Vasodilator sensitivity of coronary arteries to nitroglycerin is suppressed by prior endothelium dependent NO mediated vasorelaxation.

**Bell DR**, Dec EM, Rensberger HJ. Attenuation of endothelium-dependent vasorelaxation in hypertension by effects of pressure upon the L-arginine:nitric oxide pathway.

*Abstracts from Presentations at National and Local Scientific Meetings*

**Bell DR,** RE Nalliah, SJ Cressman, AJ Swartz, H Moon. Arterial tissue culture medium accelerates anthocyanin degradation and polymeric formation in extracts from chokeberry, bilberry and elderberry. Experimental Biology 2010, LosAngeles, CA, April 26, 2010

**Bell DR** and H Moon. Sub-vasoactive concentrations of extracts from Amazonian palm berry (*Euterpe oleraceae* Martius) protect coronary arteries from damage following external exposure to superoxide. Experimental Biology 2009, New Orleans, LA, April 20, 2009

**Bell DR**. Anthocyanin enriched berry extracts produce endothelium dependent vasorelaxation in coronary arteries and protect vascular endothelium from oxygen radical mediated injury.” American Chemical Society Annual Meeting, Philadelphia, PA Aug 17-21, 2008

**Bell DR**, BJ Pape, DL Koritnik. Low concentration of anthocyanin-enriched extracts from chokeberry attenuate lipid oxidation of isolated porcine coronary arteries in vitro. Experimental Biology 2008, San Diego, CA, April 7, 2008

**Bell DR**, RE Nalliah, JS Phillips, AJ Graier, FL Jones, KE Gochenaur. Experimental in vitro arterial reactivity and tissue culture solutions alter the time dependent stability of anthocyanins from chokeberry, bilberry and elderberry, Experimental Biology 2008, San Diego, CA, April 6, 2008

**Bell DR,** TD Burt. Phenolic acids contained in anthocyanin-enriched extracts from elderberry, bilberry and chokeberry possess endothelium-dependent and independent vasorelaxation properties in porcine coronary arteries. Experimental Biology 2007, Washington, DC, April 29, 2007.

**Bell DR** “Total phenolic content of anthocyanin-enriched extracts reduces reactive oxygen species generated from the xanthine:xanthine oxidase reaction. Mini-Symposium ASNS: Chronic Disease: Bioactive Food Components. Experimental Biology 2006

**Bell DR.** Differential vasoactive and vasoprotective effects in coronary arteries following exposure to berry polyphenolics. Symposium: Dietary Bioactive Compounds: Modulation of Physiological Processes II. Experimental Biology 2005 and the XXXV International Congress of Physiological Sciences. 4 April, 2005

**Bell DR** and TD Burt. Evaluation of the vasoactive potential of cyanidin glycosides in isolated porcine coronary arteries. Experimental Biology 2005, San Diego CA, April 3, 2005

**Bell DR** and KE Gochenaur**.** Free radical injury to coronary arteries following inhibition of SOD is attenuated by exposure to berry polyphenolics Experimental Biology 2004, Washington DC April 11-14, 2004

Phillips JS, Nalliah RE, Gochenaur KE and **Bell DR.** Investigation of the stabilities of anthocyanins in solutions using UV-visible and NMR spectroscopy. Indiana Academy of Sciences Oct 17, 2003 (also at the American Chemical Society National meeting in 2004)

**Bell DR** and KE Gochenaur. Impairment of coronary arterial relaxation by superoxide is blocked by exposure to berry polyphenolics. Experimental Biology 2003, San Diego, CA April 11-15, 2003

**Bell DR ,** K Gochenaur Characterization of Coronary Arterial Reactivity of Berry Anthocyanins. Experimental Biology, 2002, New Orleans, LA, April 20-24, 2002

**Bell DR**, J Hecht, K Gochenaur. Impaired endothelium dependent relaxation of coronary arteries following exposure to O2 - is prevented by direct overnight treatment with 1nM beta-estradiol. American Physiological Society Conference- Genome and Hormones: An Integrative Approach to Gender Differences in Physiology, Pittsburgh, PA, Oct 17-20, 2001

**Bell DR**, J Hecht. A model of arterial endothelial injury by O2- and its application to examination of vasoprotection by estrogen. Experimental Biology, 2001, Orlando, FL March 31-April 4, 2001

**Bell DR,** Hawking, A. Effects of soy isoflavone phytoestrogens on responses of coronary arteries to endothelium dependent and independent vasodilators. FASEB J14, 2000.

**Bell DR,** R Raval, V, Bryant. Alteration of porcine coronary arterial relaxation by exposure to estradiol and phytoestrogens: Influence of sexual maturity, agent combination and duration of estrogen exposure. FASEB J 13:A835, 1999.

**Bell, DR**, HJ Rensberger. Effects of Coumestrol on coronary vascular function. Consortium on Human Health and Soybeans, July 13-14, 1998, Chicago, IL.

**Bell, DR**, HJ Rensberger, R Raval, DR Koritnik, M Parachuri. "Coumestrol attenuates enhanced endothelium-dependent coronary vasorelaxation by ß-estradiol. Experimental Biology '98, San Francisco, 4-18 through 4-22, 1998.

**Bell DR**, Rensberger HJ, Koritinik DR, Koshy AG. Noradrenergic vasorelaxation of porcine coronary arteries is enhanced by direct, acute exposure to 17ß-estradiol. FASEB J10:A707,1996.

Rensberger HJ, **Bell DR,** Koritinik DR, Koshy AG. Endothelium-dependent NO mediated vasorelaxation of coronary arteries suppresses subsequent relaxation by nitroglycerin.

FASEB J10:A10,1996.

**Bell DR**, Rensberger HJ, Koshy AG, Koritnik DR. Modulation of endothelium dependent NO mediated vasorelaxation by sex steroids. Indiana University School of Medicine Scientific Sessions, February ,1996

**Bell DR**, Rensberger HJ, Koshy AG, Koritnik DR. Direct inhibition of endothelium-dependent, NO-mediated vasorelaxation of coronary arteries by progesterone. Experimental Biology '95 (formerly FASEB) April 9-13, 1995.

**Bell DR**, Rensberger HJ, Koshy AG, Koritnik DR. Endothelium-dependent, NO-mediated vasorelaxation of coronary arteries is altered directly by pretreatment with sex steroids. AHA Scientific Conference on the Functional and Structural Aspects of the Vascular Wall, Salt Lake City, February 1-4, 1995.

**Bell DR**, Rensberger HJ, Koshy AG, Koritnik DR. Estrogen pretreatment potentiates endothelium-dependent vasorelaxation in porcine coronary arteries. FASEB J 8:A616, 1994.

Blumenthal EJ, Rahimi M, Shipchandler K, Rensberger HJ, **Bell DR.** Hypertension and immune dysfunction: alterations in protein kinase C and functional activities in spleen cells. FASEB J 8:A266, 1994.

**Bell DR**, Dec EM, Rensberger HJ. Mechanism of pressure induced inhibition of endothelium-dependent vasorelaxation in hypertension. Indiana University Faculty Scientific Session, Indianapolis, IN, February 1994.

**Bell DR**, Hursey HJ. Pressure dependent and independent inhibition of vasorelaxation mediated by cyclic nucleotides in hypertension. FASEB J 7:A313, 1993.

Blumenthal EJ, Rahimi M, Shipchandler K, Rensberger HJ, **Bell DR**. Hypertension and immune dysfunction: alterations in protein kinase C and functional activities in spleen cells. Indiana Academy of Science, West Lafayette, IN, November, 1993.

**Bell DR**, Dec EM. Mechanisms of pressure induced inhibition of endothelium-dependent vasorelaxation by histamine in hypertension.

FASEB J 1992,6:A1510.

Dec EM, **Bell DR**. Contribution of extra- and intracellular calcium to pressure mediated increases of vascular sensitivity to serotonin in hypertension. FASEB J 1992, 6:A971.

**Bell DR**. Role of pressure in vascular responses to endothelial autacoids in hypertension. FASEB J 5:A1106, 1991.

Rankin GW, **Bell DR**, Sabbah HN, Stein PD. Comparison of experimental and theoretical velocity profiles in the abdominal aorta. 3rd International Conference on Physiological Fluid Dynamics, Madras India Nov 30, 1991.

**Bell DR**, Stein PD. Impaired vasorelaxation proximal and distal to aortic coarctations in rabbits. Physiologist 32(4):187, 1989.

**Bell DR**, Sabbah HN, Stein PD: Relation of fatty streak development to local hemodynamics in hypercholesterolemic rabbits. FASEB J 3(4):A1216, 1989.

**Bell DR**, Sabbah HN, Stein PD: Endothelium dependent vasodilation in isolated perfused arteries in response to flowing particulates. 18th Annual Michigan Cardiovascular Research Forum (AHA‑Mich), September 15, 1988, Ann Arbor, Michigan.

**Bell DR**, Sabbah HN, Stein PD: Skewness of profiles of velocity in the coronary arteries of dogs. Physics Med Biol 33(Suppl):372, 1988.

**Bell DR**, Sabbah HN, Stein PD: Product of subendocardial pressure and heart rate relates to myocardial oxygen consumption. FASEB J 2:A1707, 1988.

Mir SH, **Bell DR**, Bohr DF: Role of pressure in vascular abnormalities in hypertension. 17th Annual Michigan Cardiovascular Research Forum (American Heart Association of Michigan), September 15, 1987, East Lansing, Michigan.

**Bell DR**, Bohr DF: Role of pressure in endothelium‑dependent responses in hypertension. Fed Proc 45:524, 1986.

**Bell DR**, Bohr DF: Coronary vascular reactivity in deoxycorticosterone acetate hypertensive pigs. Physiologist 28:270, 1985.

**Bell DR**, Babcock CM, Bohr DF: Cause of individuality in post‑serotonin attenuation of vascular responses. Fed Proc 43:314, 1984.

**Bell DR**, Overbeck HW: Intestinal hemodynamics in perinephritic hypertensive dogs. Physiologist 25:280, 1982.

**Bell DR**, Hollingsworth S, Overbeck HW: Decreased intra ocular pressure in perinephritic hypertensive dogs. Fed Proc 40:534, 1981.

**Bell DR**, Overbeck HW: Increased resistance and impaired maximal vasodilation in normotensive vascular beds in coarctation hypertension. Fed Proc 36:491, 1979.

***Professional Acknowledgements***

Daily K. in *Men’s Health*, Sept 2004

Berry Berry Good for Youin *Newsweek*, June, 2002

Overbeck HW: Intestinal circulation during arterial hypertension. In: Shepherd AP, Granger DN (eds.). Physiology of the Intestinal Circulation. New York: Raven Press, 349‑360, 1984.

***Doctoral Dissertation***

Intestinal hemodynamics in dogs with chronic perinephritic hypertension. Department of Physiology and Biophysics, University of Alabama in Birmingham, Birmingham, Alabama, 1983.

***Masters Thesis***

Increased resistance and impaired maximal vasodilation in normotensive vascular beds of rats with coarctation hypertension. Department of Physiology, Michigan State University, East Lansing, Michigan, 1977.

**IV. Grant Applications and Support**

“ Operational Support for the Northern Indiana Cardiovascular Research and Education Center- Vascular Analysis Laboratory”. **David R. Bell, Ph.D. Principal Investigator**, Lutheran Foundation of Indiana Grant -In- Aid, January 1, 2003 - October 24, 2006. $150,000 TDC

“Application of fluorescent probe technologies to the assessment of anti-oxidant, vasoprotective and vasoactive properties of natural polyphenolic compounds” **David R. Bell, Ph.D. Principal Investigator** IUSM Research Enhancement Grant, July1, 2003- June30, 2005. $20,000 TDC;

" Modulation of Coronary Arterial Function by Estrogen: Potential Role in Protection Against Oxidant Injury." **David R. Bell, Ph.D. Principal Investigator**, August Tomusk Foundation. Approved and Funded, Project period 8-13-99 through 6-30 2003 TDC: $57,000.

" Effects of Estrogen on Coronary Vascular Reactivity ", American Heart Association-Indiana Affiliate Grant-in-Aid, **David R. Bell, Ph.D. Principal Investigator**, Approved and funded. Project period 7-1-94 through 6-30-97, TDC $18,832.

"Investigation of Common Mechanism of Immune Dysfunction in Disease." Purdue University Intercampus Collaboration Grant. **David R. Bell, Collaborating investigator**, 1-1-93 through 12-31-93. Approved and Funded, TDC $13,976.

 "The influence of pressure upon resistance artery function in hypertension. “Indiana University School of Medicine Basic Research and Support Grant. **David R. Bell, Principal Investigator**, Approved and funded, Program period 4/1/91 - 3/31/92, Program TDC $8,299.

"Influence of Fluid Dynamics on Vascular Reactivity”. Henry Ford Hospital, Small Projects Fund, Program Period: 2/1/89 ‑ 11/30/89. **David R. Bell, Principal Investigator**, Approved and Funded, Program TDC: $4,494.

"Character of Flow and Endothelial Relaxation Factor". American Heart Association of Michigan, Grant‑in‑Aid. Program Period: 7/1/86 ‑ 6/30/87. **David R. Bell, Principal Investigator**, Approved and funded Program TDC: $20,096.

" Coronary Vascular Reactivity in DOCA Hypertensive Pigs." NIH‑National Heart, Lung and Blood Institute: National Research Service Award. **David R. Bell, Principal Investigator**, Program Period: 1/1/85 ‑ 12/31/86. Approved and funded, Program TDC: $45,096.

*Additional Grant Applications*

“Proteomic analysis of induction of anti-oxidant defense by estrogen in porcine coronary arteries” IUSM-Proteomics Core grant. $30,000, 2008 **David R. Bell, Ph.D. PI** (not funded)

“Evaluation of Interaction of Berry Polyphenolics and Estrogen on Coronary arterial function.” NIH regional NCCAM supplemental grant. $15,000 **David R. Bell, Ph.D. PI** (not funded)

 “Cardiovascular Center of Excellence**”** Lutheran Foundation, Fort Wayne, Indiana. M. Mirro PI TDC $2,300,000. **David R. Bell, Ph.D. PI** for CV and Diabetic Rat research components February5, 2001 (not funded)

 “Assessing the Effects of Berry Anthocyanins On Cardiovascular Function and Diabetes: Using Scientific Validation in a Field-to-Finished Product approach to Designing Functional Foods.” 21st Century Research and Technology Fund. **David R. Bell, Ph.D., director, Basic CV research** TDC= 328,675, 2years , FWCME total= $146,515 (not funded) 2001-2002

Soy Nutraceutical Center of Excellence. FWCME section: Effects of Soy Compounds on Coronary Vascular Reactivity, **David R. Bell, Ph.D., director, Basic CV research**, 2 years, TDC FWCME= $163,424. (not funded) 2000-2001

Identification and Assessment of Cardiovascular Properties of Berry Polyphenols: A Bridge to Development of a Discovery Platform for Commercialization of Bioactive Plant Constituents. Submitted to the Indiana 21st Century Research and Technology Fund, **David R. Bell, Ph.D., Director, Basic CV research**. TDC FWCME= $171,000. (not funded)2000-2001

**“**Assessing the effects of soy components on cardiovascular function. 21st Century Research and Technology Fund, Central Soya Inc.. Project Period 3-31-01- 3-30-03. **David R. Bell, Ph.D., director, Basic CV research**, TDC:$138,000 (not funded)2000-2001

 “Assessing the effects of berry anthocyanins on cardiovascular function and diabetes: using scientific validation in a field-to-finished product approach to designing functional foods. 21st

Century Research and Technology Fund, Artemis Inc.. Project Period 3-31-01- 3-30-03. **David R. Bell, Ph.D., director, Basic CV research**, TDC:$113,000(not funded)

“New Therapies for Blood Vessels: Optimizing Development, Funding and Commercialization in Indiana. Indiana 21rst Century Fund. Keith L March, M.D., Ph.D. Principal Investigator, **David R. Bell, Collaborating Investigator (Vascular Physiology Core Facility)**, Project period 1-1-00 - 12-31-00. TDC $ 5,500,000 (Vascular Physiology Core, $150,000) not funded

" Modulation of Coronary Arterial Function by Estrogen: Potential role in protection against oxidant injury ", American Heart Association-Indiana Affiliate Grant-in-Aid, **David R. Bell, Ph.D. Principal Investigator**, Project period 7-1-98 through 6-30-00, TDC $49,827.(not funded)

"Alteration of Coronary Arterial Function by Estrogen: Mechanisms and Consequences ", American Heart Association-Indiana Affiliate Grant-in-Aid, **David R. Bell, Ph.D. Principal Investigator**, Project period 7-1-97 through 6-30-99, TDC $60,000.(percentile score meritorious and awarded funding but insufficient funds were available to AHA-Indiana during project period)

" Mechanisms underlying alterations of coronary vasorelaxation by sex steroids.", American Heart Association-Indiana Affiliate Grant-in-Aid, **David R. Bell, Ph.D. Principal Investigator**, Project period 7-1-96 through 6-30-98, TDC $56,600. (missed funding by 0.08 pts)

" Effects of Estrogen on Coronary Vascular Reactivity ", NIH RO1 revision, submitted March 1, 1994, **David R. Bell, Ph.D. Principal Investigator**, Project period 3-1-95 through 2-28-98, TDC requested $352,005. (Received significant scientific merit, good category)

" Effects of Estrogen on Coronary Vascular Reactivity ", American Heart Association National Grant-in-Aid, submitted July 1, 1993, **David R. Bell, Ph.D. Principal Investigator**, Project period 7-1-94 through 6-30-97, TDC requested $108,106. (not funded)

"Pressure and Vascular Sensitivity in Hypertension". American Heart Association of Indiana, Grant-in-Aid, Program Period: 7/1/90 - 6/30/92. **David R. Bell, Principal Investigator**, Requested Program TDC: $34,264. (Approved but not funded)

NIH RO1, "Pressure and Vascular Sensitivity in Hypertension". Program Period: 12/1/89 ‑ 11/30/92. **David R. Bell, Principal Investigator**, Requested Program TDC: $203,220. (Approved but not funded 11/89).