

Warwick A. Arden

Curriculum Vitae

General Information

Professional Address Office of the Provost
Campus Box 7101
North Carolina State University
Raleigh, NC 27695

Citizenship Australian
U.S. Permanent Resident

Personal Married (Barbara S. Loeffler, DVM, MS)
Children: Matt (16), Andy (14), Kate (11) and Ben (9)

Education

University of Kentucky	Ph.D.	1993	Physiology and Biophysics
Michigan State University	M.S.	1989	Physiology
Michigan State University	Residency	1986	Large Animal Surgery
University of Sydney	Diploma	1982	Veterinary Clinical Sciences
University of Sydney	Internship	1982	Veterinary Surgery
University of Sydney	B.V. Sc. (Honors) (Equivalent to D.V.M.)	1981	Veterinary Medicine

Professional Certifications

American College of Veterinary Surgeons	Diplomate	1990
Board of Veterinary Medicine New South Wales, Australia	Board Certification	1981

Employment

2010-present	Provost & Executive Vice Chancellor, North Carolina State University
2009-2010	Interim Provost & Executive Vice Chancellor, North Carolina State University
2004-2010	Dean & Professor of Clinical Sciences, College of Veterinary Medicine, North Carolina State University
2000-2004	Professor & Head, Department of Veterinary Clinical Medicine, College of Veterinary Medicine, University of Illinois at Urbana-Champaign
1998-2000	Associate Professor of Surgery & Physiology and Director, Surgical Research Program, Division of General Surgery, Department of Surgery, College of Medicine, University of Kentucky
1993-1998	Assistant Professor of Surgery (Primary Appointment) and Assistant Professor of Physiology and Biophysics (Joint Appointment), Division of General Surgery, Department of Surgery, College of Medicine, University of Kentucky
1990-1993	Senior Clinical Research Associate, Divisions of Cardiothoracic and General Surgery, Department of Surgery, College of Medicine, University of Kentucky
1986-1990	Assistant Professor of Surgery, Department of Large Animal Clinical Sciences, College of Veterinary Medicine, Michigan State University
1983-1986	Resident/Instructor in Surgery, Department of Large Animal Clinical Sciences, College of Veterinary Medicine, Michigan State University
1983	Staff Veterinarian, Crown Street Veterinary Hospital, Wollongong, New South Wales, Australia
1982	Intern in Surgery, Rural Veterinary Center, Faculty of Veterinary Science, University of Sydney, Camden, New South Wales, Australia

Awards and Honors

2009-2010	President, Association of American Veterinary Medical Colleges
2009	NC Veterinarian of the Year Award, North Carolina Veterinary Medical Association

2008-2009	Member, Governor's Agricultural Biotechnology Steering Committee, North Carolina Biotechnology Center
2007-2009	Member, NC Equine Industry Study Executive Committee, Agricultural Advancement Consortium, North Carolina Rural Economic Development Center
2007	Elected to North Carolina Institute of Medicine
1997	College of Medicine Research Day Keynote Address, University of Tennessee Medical Center
1993-1996	National Institutes of Health (NHLBI) Clinical Investigator Award
1989	Phi Beta Delta - National Honor Society of International Scholars
1989	Phi Zeta - National Honor Society of Veterinary Medicine
1981	First in Final Year (University of Sydney)
1981	STD Symons University Prize for Top Student in Clinical Subjects (University of Sydney)
1981, 1980, 1979, 1977	Martin McIlraith Scholarship in Veterinary Science (University of Sydney)

Other

2010	Member, University of Sydney Veterinary Teaching Hospital Review Task Force
2003	Guest Reviewer, Critical Care Medicine
1999	Chair, Large Animal General Surgery Scientific Session, Annual Scientific Meeting, ACVS Surgical Symposium, San Francisco, CA
1999	Program Chair and Co-Organizer, Advances in Veterinary Shock Research, 4th International Shock Congress, Philadelphia, PA
1999	Reviewer, American Heart Association Southeast Consortium Study Section 1: Anesthesia, Radiology, Surgery, Clinical Cardiovascular Physiology, Tampa, FL
1998	Reviewer, American Heart Association, Mid America Consortium Study Section 1: Anesthesia, Radiology, Surgery, Clinical Cardiovascular Physiology, Columbus, OH

1997-2000	Guest Reviewer, Journal of Applied Physiology
1997	Chair; Basic Sciences Session, Annual Scientific Meeting, ACVS Surgical Symposium, Orlando, FL
1997	Reviewer; American Heart Association Affiliate Study Section G: Molecular Signaling, St. Louis, MO
1993-2000	Guest Reviewer, Journal of the American Veterinary Medical Association
1993-2000	Guest Reviewer, American Journal of Veterinary Research

Professional Organization Memberships

American Association for the Advancement of Science (AAAS)
 American Veterinary Medical Association (AVMA)
 American College of Veterinary Surgeons (ACVS)
 Association of American Veterinary Medical Colleges (AAVMC)
 North Carolina Veterinary Medical Association (NCVMA)

Administrative Experience

Provost & Executive Vice Chancellor, North Carolina State University (December 2010-present).

Interim Provost & Executive Vice Chancellor, North Carolina State University (May 2009-December 2010).

This position reports to the Chancellor. NC State is a public doctoral/research-extensive, land-grant university with 34,376 students (23,636 undergraduate, 8,267 graduate/professional, 2,473 non-degree-seeking), 2,073 faculty, 5,936 staff, and an annual budget of \$1.3 billion.

Reporting Units: All academic colleges (12) report directly to the Provost including Undergraduate Academic Programs and the Graduate School. Other reporting units: Diversity & Inclusion; Distance Education & Learning Technology Applications; Enrollment Management & Services; Equal Opportunity & Equity; Faculty Affairs; International Affairs; NCSU Libraries; Student Affairs (Arts Program; Campus Recreation; Health and Career Services; Housing; and Student Activities); University Planning & Analysis; Biotechnology Program; Entrepreneurship Initiative; Institute for Advanced Analytics; Science, Technology, Engineering & Math (STEM) Initiative; and Interdisciplinary Environmental Sciences Program.

Major Accomplishments:

- Budget
 - Overseeing, with Vice Chancellor for Finance and Business, the current FY 2010-2011 Strategic Reallocation process and the FY 2011-2013 budget planning process, including planning for a potential 15% reduction (\$80 million) in state appropriated budgets.
 - Oversaw, with Vice Chancellor for Finance and Business, the 2010-2011 budget preparation which resulted in a relatively neutral budget with strategic reserves available for reinvestment.
 - Oversaw, with Vice Chancellor for Finance and Business, the 2009-2010 budget preparation that entailed a 10% reduction (\$53 million) in the state appropriated budget.

- Strategic Planning
 - 2011-2020 Strategic Plan, *The Pathway to the Future*, approved by Board of Trustees in April 2011. Goals:
 - Enhance the success of our students through educational innovation.
 - Enhance scholarship and research by investing in faculty and infrastructure.
 - Enhance interdisciplinary scholarship to address the grand challenges of society.
 - Enhance organizational excellence by creating a culture of constant improvement.
 - Enhance local and global engagement through focused strategic partnerships.
 - Lead, with the Chair of the Faculty, the University Strategic Planning process.
 - Since May 2010 have formed and co-led the Plan to Plan Committee, Strategic Plan Steering Committee, held University Council Strategic Planning Retreat, identified nine major focus areas of the strategic plan and formed Task Forces around each of these foci, held multiple campus forums, and solicited campus feedback.
 - Developed (with University Communications) Strategic Planning Communication Plan.

- Campus Reorganization/Realignment Plan
 - Presented *Recommendations for Strategic Realignment to Increase Organizational Efficiency and Effectiveness* to Chancellor in March 2011. Key components:
 - Administrative Consolidation and Realignment (Extension, Engagement, and Economic Development; Student Support Programs; Equity and Diversity)
 - Review of Academic Programs (Science Programs; Low-Enrolled Courses and Programs; Academic Planning Model; Distance Education; Summer Session; Student Leadership Programs)
 - Consolidate and Realign Business Services (Realign Reporting Relationships; Create Business Operations Centers)
 - Reduce Organizational Bureaucracy (Review of Policies, Regulations and Rules; Reinstate Administrative Process Review Committee)
 - Oversaw, with Vice Chancellor for Finance and Business, development of plan for administrative reorganization and realignment.

- Reappointment, Promotion and Tenure
 - Led 2010-2011 Reappointment, Promotion and Tenure cycle, resulting in 62 faculty reappointments and 79 faculty approved for tenure and promotion.
 - Led 2009-2010 Reappointment, Promotion and Tenure cycle, resulting in 60 faculty reappointments and 81 faculty approved for tenure and promotion.

- College Leadership
 - 2010-2011: Leadership Reviews scheduled for College of Engineering and Vice Provost for Enrollment Management and Services. Dean search underway for College of Veterinary Medicine.
 - 2009-2010: Completed successful national search for Dean of the College of Education and conducted Leadership Reviews for Colleges of Textiles, Design and Physical and Mathematical Sciences.

- Faculty Recruitment/Retention
 - Assisted and coordinated numerous key faculty recruitment and retention efforts across multiple colleges. These efforts included: successful application for \$388,000 from the UNC President's Recruitment and Retention Fund; utilization of the Targets of Opportunity program to facilitate several key underrepresented minority faculty recruitments.

- Policy
 - Coordinated efforts to revise, clarify and simplify several keys policies, regulations and rules pertaining to the conduct of the academic mission of the university.

- International Programs
 - Coordinated and concluded the 15 month Korea Campus (Songdo) feasibility study.

- Provost's Office Staff
 - Completed staffing reorganization within immediate Provost's Office to increase functionality, stability and transparency.
 - Provost's immediate staff meet twice weekly to discuss and track current issues.
 - Established Provost's Office Communications position to focus on improving internal communications within the university.

Dean & Professor, College of Veterinary Medicine, North Carolina State University (2004-2010). This position reports to the Provost and Executive Vice Chancellor. The College of Veterinary Medicine comprises approximately 155 faculty (tenure track and clinical title), 400 staff members, and enrolls more than 300 DVM students, 75 graduate students, and 75 interns and residents. This position administers an annual budget of approximately \$68 million, including \$31 million state funds, \$17 million Teaching Hospital revenue, and \$12.7 million in

research expenditures (FY 2008). The College is ranked in the top five DVM programs by U.S. News & World Report.

Reporting Units: Department of Clinical Sciences, Department of Molecular Biomedical Sciences, Department of Population Health and Pathobiology, Veterinary Teaching Hospital. Other direct reports: Senior Associate Dean and Director for Academic Affairs, Associate Dean and Director of Medical Services, Associate Dean and Director for Research and Graduate programs, Assistant Dean for Business and Finance, Assistant Dean for College Relations.

Major Accomplishments: A number of advances took place in the College under Dr. Arden's leadership and as the result of excellent work by Associate and Assistant Deans, Department Heads, Faculty and Staff. Examples include:

- Realignment of College efforts around six programmatic priorities which cross departments, disciplines and missions: companion animal health, equine health, food animal/agro-security/public health, comparative biomedical sciences, ecosystem health, and animal welfare.
- Successful completion of AVMA Council on Education reaccreditation self-study and site visit (every 7 years).
- Personnel
 - Successful national searches for two Department Heads (Clinical Sciences, Molecular Biomedical Sciences), Associate Dean for Research and Graduate Studies, Director of the Center for Comparative Medicine and Translational Research, and Executive Director of Development.
 - Completed numerous faculty hires and expanded the College's expertise in Animal Welfare, Internal Medicine/Critical Care, Oncology, Radiation Oncology, Anesthesiology, Swine Medicine, Poultry Medicine, Pathology, Behavior, Dentistry, Nutrition, and Livestock Infectious Disease.
- Program Development
 - Established the Animal Welfare, Ethics, and Public Policy Program, which is committed to improving animal health and community wellbeing through progressive stewardship, service, education, and public policy. Five faculty members support initiatives including shelter animal medicine, animal cruelty investigations, rural outreach, euthanasia support and disaster planning and response.
 - Established the Center for Comparative Medicine and Translational Research. The Center's mission is to promote scientific discovery and facilitate its clinical application to achieve the goal of improving the health of animals and humans; currently has more than 100 faculty representing five colleges and 16 departments at NC State.
 - New programs implemented in dentistry, behavior, and clinical nutrition.

- Professional Students/Curriculum
 - Creation of Clinician-Scientist umbrella program which includes DVM/PhD program, Summer Research Internship program, and Residency/PhD programs.
 - Implemented combined DVM/MBA degree program with the College of Management.
 - Implemented student counseling program.
 - Began comprehensive evaluation of the professional curriculum.
 - Hosted the 2007 Student American Veterinary Medical Association Symposium with approximately 1,600 students in attendance.
 - Hosted the 2009 Merck-Merial NIH Veterinary Scholars Symposium.
 - Incorporated NC Emergency Responder credentialing into the DVM professional curriculum, one of the first programs of its kind in the country.

- Research
 - Annual research expenditures exceeded \$12 million.
 - Most NIH funding (\$7 million FY 2008) of any college at NC State.
 - Established the Clinical Studies Core in the Center for Comparative Medicine and Translational Research.

- International Program
 - Relationships established with numerous international universities and programs including ones in China, India, Chile, Japan, Uruguay, Germany, Australia, New Zealand, United Kingdom, and Iraq.
 - Ten percent of NC State DVM students will have had international professional experience by graduation.
 - Together with the Office of the Provost (International Affairs), developed the jointly supported Global Health Initiatives program.

- Extension/Outreach/Economic Development
 - Veterinary Teaching Hospital continues to grow in business volume by 10-20% per year. The VTH had more than 22,700 case accessions in FY 2009.
 - Expanded program (three full-time clinical faculty and two veterinary technicians) to provide medical care for all animals at the Wake County Animal Care, Control and Adoption Center.
 - The College led the North Carolina Coalition for the National Bio- and Agro-Defense Facility, a federal project with a potential multi-billion dollar effect on central NC.
 - Partnered with NC Department of Agriculture & Consumer Services, NC Department of Health & Human Services and UNC-CH School of Public Health to hold annual One Medicine Symposium in Research Triangle Park.

- College Relations/Fundraising
 - Conducted external review of College Relations programs and implemented coordination of Alumni, Communications, Development and Animal Welfare under new Assistant Dean for College Relations. Expanded major gift staff.

- Added web communications staff and redesigned College website.
 - Extensive engagement with the state legislature to secure \$38 million in funding for the Randall B. Terry, Jr. Companion Animal Veterinary Medical Center.
 - Raised almost \$100 million, including the largest single private gift (\$25 million) in NC State history, through the Campaign for Animal Health and Welfare, part of the \$1.3 billion Achieve! Campaign.
 - Established the College's first named, distinguished professorship.
- Diversity
 - Invested heavily in the College's diversity and cultural affairs program. This includes extensive recruitment efforts, public and high school education initiatives, involvement in admissions, post-admission mentoring and conduct of cultural awareness modules/lunch seminars.
 - Hosted first Southeastern Veterinary Student Diversity Matters Symposium, attracting 80 faculty and students from ten colleges of veterinary medicine.
 - The DVM Class of 2009 had more African American graduates (4) than any other in the history of the College and the Class of 2013 includes more African American students (9) than any previous class in addition to three other minority students (15% total).
- Facilities (New Construction and Improvements)
 - Randall B. Terry, Jr. Companion Animal Veterinary Medical Center: \$72 million, 110,000 square-foot facility to be completed in early 2011. The Terry Center will be a national model for excellence in companion animal medicine, offering cutting-edge technologies for imaging, cardiac care, cancer treatments, internal medicine, and surgery.
 - CVM Research Building: \$34 million, 100,000 square-foot structure completed in 2005. The four-story facility includes 33 state-of-the-art laboratories plus two BioSafety level 3 labs for infectious disease research.
 - Opened Iams MRI Center (now AnimalScan).
 - Completed \$18 million campus infrastructure project and \$18 million main building HVAC project.
 - Renovation and expansion planned (\$600,000 cost with more than \$260,000 raised from private sources) for the Equine Health Center in Southern Pines.
 - Upgraded student spaces including the William Rand Kenan Library of Veterinary Medicine, cafeteria, labs, and commons areas.

Professor & Head, Department of Veterinary Clinical Medicine, College of Veterinary Medicine, University of Illinois at Urbana-Champaign (2000-2004). The department is the largest of three departments in the University of Illinois College of Veterinary Medicine. It comprises approximately 220 individuals including 50 faculty (tenure track and clinical title), 50 interns, residents and graduate students, and 120 academic professionals and staff. The head of the Department of Veterinary Clinical Medicine also administers the Veterinary

Teaching Hospital (VTH) which has an annual in-house caseload of approximately 19,000 and an ambulatory case load of 30,000 seen in 2,000 annual farm visits. This position administers an annual budget of approximately \$15 million, including \$6 million state funds and \$9 million VTH revenue (FYE 2003). From FYE 2000 to 2002, state appropriations increased by 12.6%. Subsequent rescissions due to a state-wide budget deficit have reduced this gain to 4.5% (FY '04, budgeted). From FYE 2000 to 2003, VTH gross revenues increased by 33.7%.

Major Accomplishments:

- Account restructuring including realignment of hospital accounts and development of additional ledger for planned facility and equipment renovation and replacement.
- Implementation of new university-wide financial accounting and human resources systems.
- Administrative restructuring of the department
 - Consolidation from nine to seven sections, including unification and redevelopment of agricultural animal medicine program.
 - Development of Assistant Head positions representing the three major missions of the department.
 - Development of Hospital Board with realignment of reporting through the Assistant Head and Hospital Chief-of-Staff.
 - Realignment of Information Systems to include administration of Hospital Information System (HIS), Radiological Information System (RIS), Medical Records and Desktop Support.
 - Development and implementation of Coordinator of Hospital Facilities position.
 - Development and implementation of Coordinator of Client Services position.
 - Establishment of Hospital Safety and Compliance Committee.
- Personnel
 - Successful recruitment of 22 faculty, including tenure track and clinical title faculty, in internal medicine, zoological and wildlife medicine, dermatology, oncology, general and orthopedic surgery, anesthesia, radiology, equine surgery and food animal medicine.
 - Development of eight successful promotion and tenure dossiers.
 - Recruitment of seven adjunct faculty from academic units or private sector partners.
 - Recruitment of four academic professionals including VCM Business Manager, Coordinator of Hospital Facilities, Coordinator of Client Services and Client Counselor.
 - Expansion of VCM/VTH technical staff by 47%.
- Facilities and Equipment (Major)
 - Directed approximately \$1,622,000 in construction or renovation projects within the VTH (FYE '00-'04).

- Directed purchase and implementation of approximately \$3.9 million in new research and clinical equipment (FYE '00-'04).
- Research
 - Development of multi-disciplinary departmental research programs in cardiovascular sciences, oncology and orthopedic biology.
 - Recruitment of five clinical faculty with advanced research training (PhD).
 - Construction or renovation of six new research labs.
 - Extensive investment in current research equipment and technology.
 - Departmental sponsored program awards increased from \$760,573 (FY '01) to \$1,225,857 (FY '03).
- Development
 - Participation, with Office of Advancement, in annual fund-raising through Friends of the Hospital and Companion Animal Memorial Programs. Current gifts to department increased by 230% from FY '01 to FY '03.
 - Participation, with Office of Advancement, in generation of \$2 million planned gift to the Veterinary Teaching Hospital.

Committee Service & Leadership

North Carolina State University

- 2010-present Co-Chair, Strategic Planning Steering Committee
- 2010-present Co-Chair, Strategic Planning Committee
- 2009-present Member, University Council
- 2009-present Member, Executive Officers
- 2009-present Chair, Deans Council
- 2009-present Chair, Vice Provosts Council
- 2009-present Ex-Officio Member, Academic Affairs and Personnel Committee, Board of Trustees
- 2009-present Ex-Officio Member, Audit, Finance and Planning Committee, Board of Trustees
- 2009-present Ex-Officio Member, Faculty Senate Executive Committee
- 2009-present Ex-Officio Member, Chancellor's African American Community Advisory Council
- 2009-present Ex-Officio Member, Chancellor's Student Liaison Committee
- 2009-present Co-Chair, Hunt Library Building Committee
- 2009-present Co-Chair, Tuition Review Advisory Committee
- 2009-present Chair, Honorary Degree Committee
- 2009-present Chair, Committee on Committees
- 2009-present Chair, University Budget Advisory Committee
- 2009-present Chair, University Space Committee
- 2009-present Member, IT Steering Committee
- 2009-present Member, Korea Campus Feasibility Study Task Force
- 2006 Chair, Dean of College of Humanities and Social Sciences Nomination

Committee
 2004-2009 Member, Center for Marine Sciences and Technology Administrative Council
 2004-2009 Chair, Dean's Cabinet, College of Veterinary Medicine
 2004-2009 Chair, Faculty Committee on Veterinary Faculty Practice Plan, College of Veterinary Medicine

University of North Carolina General Administration

2009-present Member, Chief Academic Officers

North Carolina School of Science and Mathematics (UNC constituent institution)

2009-present Ex-Officio Member, Board of Trustees
 2009-present Ex-Officio Member, Educational Policies & Practices Committee, Board of Trustees

University of Illinois

2002-2004 Member, Advisory Committee for Evaluation of Veterinary Care Program for Agricultural Animals on UIUC Campus
 2003-2004 Member, Provost's Committee on Evaluating Public Service for Promotion and Tenure
 2003-2004 Member, Chancellor's Steering Committee, Cross-Campus Interdisciplinary Initiatives
 2001-2004 Member, Executive Committee, Interdisciplinary Program in Aging
 2002-2004 Member, South Farms Revitalization Committee, College of Veterinary Medicine Representative
 2002-2004 Member, College of Agriculture, Consumer and Environmental Studies (ACES) South Farms Relocation Committee, College of Veterinary Medicine Representative
 2002-2004 Member, College of Veterinary Medicine Planning Committee
 2002-2004 Member, College of Veterinary Medicine, Dean's Advisory Committee
 2002-2004 Member, College of Veterinary Medicine, Heads Committee
 2002-2003 Chair, Head of Department of Veterinary Pathobiology Search Advisory Committee, College of Veterinary Medicine
 2001-2004 Member, Conservation Medicine Center of Chicago Steering Committee
 2001-2002 Member, Department of Veterinary Clinical Medicine, Production Animal Medicine and Management Advisory Committee
 2000-2004 Chair, Department of Veterinary Clinical Medicine Promotion and Tenure Committee, College of Veterinary Medicine
 2000-2004 Chair, Department of Veterinary Clinical Medicine Advisory Committee, College of Veterinary Medicine
 2000-2003 Chair, Department of Veterinary Clinical Medicine Hospital Management Committee, College of Veterinary Medicine
 2000-2002 Member, College of Veterinary Medicine, Dean's Council
 2000-2001 Member, Dean of College of Veterinary Medicine Search Advisory Committee

University of Kentucky

- 1998-2000 Member, Research/Seminar Committee, Gill Heart Institute, Medical Center
- 1996-2000 Member, Clinical Research Center Scientific Review Committee, College of Medicine
- 1996-2000 Member, Clinical Research Center Advisory Committee, College of Medicine
- 1995-1996 Member, Research Committee, Department of Surgery
- 1994-1996 Member, Research Space Committee, Department of Surgery
- 1994-1996 Member, Committee on Strategic Plan for Research, Department of Surgery

Michigan State University

- 1988 Member, Planning Committee, Postgraduate Conference for Veterinarians
- 1987-1988 Member, Anesthesiology Search Committee, Department of Large Animal Clinical Sciences
- 1987-1989 Member, Residency Committee, Department of Large Animal Clinical Sciences
- 1986-1989 Faculty Representative, Student Chapter of American Association of Equine Practitioners
- 1985-1986 Member, Graduate Study and Research Committee, Department of Large Animal Clinical Sciences

Professional Organization Service & Leadership

Association of American Veterinary Medical Colleges (AAVMC)

- 2005-present Board of Directors (Past-President 2010-present, President 2009-2010, President-Elect 2008-2009, At-large member, U.S. colleges 2005-2008)
- 2008-present AAVMC /AVMA Joint Committee (Co-chair 2009-present, member since 2008)
- 2008-present Member, Executive Committee
- 2009-present Ex-Officio Member, National Recruitment Strategy Steering Committee
- 2009-present Member, Veterinary Medical College Application Service Executive Committee
- 2008-2009 Member, Strategic Plan Steering Committee

Other

- 2010-present Member, North Carolina Agricultural Biotechnology Advisory Council (Member, Leadership Committee 2010-present)
- 2009-present Member, Board of Directors, Renaissance Computing Institute (RENCI)
- 2009-present Board of Trustees, Triangle Universities Center for Advanced Studies, Inc. (TUCASI) (Vice-President 2010-present, Executive Committee 2010-present, Member 2009-present)
- 2009-present Member, Triangle Universities Nuclear Laboratory Advisory Committee
- 2009-present Member, Governing Board, Triangle Research Libraries Network
- 2007-present Member, North Carolina Institute of Medicine
- 2006-2008 Head, North Carolina Consortium for the National Bio and Agro-Defense Facility

Grants

National Science Foundation: DUE-1038154: I3: Maximizing the Impact of STEM Outreach (MISO) through Data-Driven Decision Making, 2010-2011, WA Arden (PI), EN Wiebe, JJ Zuiches, S Schulze, (\$1.248 million, \$250,000 FY10-11)

Veterinary Medicine Research Funds: VCM Faculty Research Enhancement Program, 2003-2004, WA Arden (PI), (\$10,000)

Veterinary Medicine Research Funds: VCM Research Equipment Development, 2003-2004, WA Arden (PI), (\$50,000)

Veterinary Medicine Research Funds: VCM Research Facility Remodel Program, 2003-2004, WA Arden (PI), (\$500,000)

Veterinary Medicine Research Funds: Continuation of VCM Graduate Student Research Program, 2003-2004, WA Arden (PI), (\$60,000)

Illinois Governor's Venture Tech Funds: VCM Research Equipment Development, 2002-2003, WA Arden (PI), (\$100,000)

Illinois Governor's Venture Tech Funds: Development of an Interdisciplinary Program in Comparative Oncology, 2002-2003, WA Arden (Administrator), (\$50,000)

Illinois Governor's Venture Tech Funds: Development of Interdisciplinary Program in Orthopedic Biology, 2002-2003, WA Arden (Administrator), (\$50,000)

Illinois Governor's Venture Tech Funds: Continuation of Interdisciplinary Program in Cardiovascular Sciences, 2002-2003, WA Arden (PI and Administrator), (\$50,000)

Illinois Governor's Venture Tech Funds: Continuation of Veterinary Clinical Medicine Graduate Student Research Program, 2002-2003, WA Arden (PI), (\$60,000)

Illinois Governor's Venture Tech Funds: Purchase and Implementation of Fast Spiral CT Scanning for Clinical Research, 2001-2002, WA Arden (PI), (\$200,000.) Additional (\$100,000) matching funds from Office of Vice Chancellor for Research.

Illinois Governor's Venture Tech Funds: Initiation of Veterinary Clinical Medicine Graduate Research Program, 2001-2002, WA Arden (PI), (\$60,000)

Illinois Governor's Venture Tech Funds: Development of a Interdisciplinary Program in Cardiovascular Biology, 2001-2002, WA Arden (PI) DR Gross (Co-PI), (\$80,000)

National Institutes of Health (NHLBI): R01 HL98-009: Role of CD36 and Lipoproteins in Hypertension, 1999-2003, Co-Investigator with E.Smart, Ph.D., (\$873,000)

National Institutes of Health (NIGMS): R29 GM55737: CGRP, NO and Sepsis-Induced Microvascular Dysfunction, 1997-2002 Principal Investigator, (\$493,169)

University of Kentucky Medical Center Research Grant: CGRP, NO and Sepsis-Induced Microvascular Dysfunction, 1997-1998, Principal Investigator, (\$12,000)

University of Kentucky: University-Wide Major Research Equipment Competition: Digital Ratio Imaging and Analysis System, 1996, Principal Investigator (\$85,386, including \$45,000 matching funds from UK Department of Surgery)

Intramed Corporation: Development of Aortic Balloon Angioscope and Endovascular Aortic Graft Delivery System, 1994-1995, Co-Investigator with G. Hyde, M.D., (\$90,000)

University of Kentucky Department of Surgery Research Awards: Effect of Interleukin-1 Receptor Antagonism on Lipopolysaccharide-Induced Changes in Microvascular Function, 1994-1995, Co-Principal Investigator with W. Charash, M.D., (\$10,000)

National Institutes of Health (NHLBI): Clinical Investigator Award, K08 HL02918: Role of Neuropeptide CGRP in the Vascular Response to Sepsis, 1993-1996, Principal Investigator, (\$239,000)

Pfizer-Roerig Corporation Research Grant: Serum and Tissue Levels of Antibiotics and Bacterial Translocation During Hemorrhagic Shock, 1993-1994, Principal Investigator, (\$55,132)

Pfizer-Roerig Corporation Research Grant: Sepsis and E5-Continued Evaluation of Effect of E5 on Microcirculatory Response to Lipopolysaccharide 1993-1994, Principal Investigator, (\$58,625)

American College of Veterinary Surgeons, New Diplomate Research Grant Award, 1992-1993, Principal Investigator, (\$5,000)

Pfizer-Roerig Corporation Research Grant: Sepsis and E5-effects on Skeletal Muscle Microcirculation, 1990-1992, Co-Investigator with R.W. Schwartz, M.D., (\$212,000)

Ingham County Emergency Medicine Residency Research Program, 1989-1990, Principal Investigator, (\$2,000)

Michigan State University, Biomedical Research Support Grant, 1989-1990, Principal Investigator, (\$5,000)

Michigan State University, Veterinary Clinical Center Research Fund, 1989-1990, Principal Investigator, (\$3,000)

Tri-County Horse Association Grant, 1987-1988, Principal Investigator (\$2,000)

Michigan State University, Biomedical Research Support Grant, 1986-1987, Principal Investigator, (\$5,000)

Michigan State University, Veterinary Clinical Center Research Fund, 1985-1986, Principal Investigator, (\$3,000)

Michigan State University, Biomedical Research Support Grant, 1985-1986, Principal Investigator, (\$5,000)

Michigan State University, Veterinary Clinical Center Research Fund, 1984-1985, Principal Investigator, (\$3,000)

Scientific Publications

Chung E, Gu Q, Kwong K, **Arden WA**, Lee LY: Comparison of capsaicin-evoked calcium transients between rat nodose and jugular ganglion neurons. *Auton Neurosci*. 2002 May 31; 97(2):83-8.

Bernard AC, Fitzpatrick EA, Maley ME, Gellin GL, Tsuei BJ, **Arden, WA**, Boulanger BR, Kearney PA, Ochoa JB: Beta adrenoceptor regulation of macrophage arginase activity. *Surgery*. 2000 Apr; 127(4):412-8.

Jorgenson MS, Wagner PG, **Arden WA**, Jackson BA: Modulation of stimulus-secretion coupling in porcine adrenal chromaffin cells by receptor-mediated increases in protein kinase C activity. *J Neurosci Res* 2000 Mar 15;59(6):760-6

Arden WA, Oremus R, Gellin G: CGRP modulates LPS- and cytokine-induced iNOS/NO formation. *New Horizons in CGRP and Related Peptides Research*. Landes Press, London, U.K., 1999.

Wagner P*, Jorgensen M, **Arden W**, Jackson B: Stimulus-secretion coupling in porcine adrenal chromaffin cells: acute effects of glucocorticoids. *J Neurosci Res* 1999; 57, 643-650.

Schwartz RW, Donnelly MB, **Arden WA**, Sloan DA, Blue AV, Strodel WE: Predicting the technical skills of surgical interns. *Current Surgery* 1997; 54(4), 213-217.

Loeffler BS, **Arden WA**, Lee L-Y: Effect of capsaicin pretreatment on endotoxin-induced airway hyperresponsiveness in guinea pigs. *Lung* 1997; 175(4), 253-263.

Arden WA, Donnelly MB, Sloan DA, Schwartz RW, Strodel WE: Use of animal laboratories for objective evaluation of the technical skills of junior surgery residents. *Current Surgery* 1996; 53(8): 470-475.

Hill BB*, Hyde GL, Kuo C-S, Loh FK, Wright LH, **Arden WA**, Nypaver TJ, Kwolek CJ: Aorto- scopy: a guidance system for endoluminal aortic surgery. *J Vasc Surg* 1996; 24(3):439-448.

Gross DR, Salley RK, Maley RH, **Arden WA**, Nammalwar P: Effects of internal mammary artery pedicle coronary artery bypass grafting on aortic valve leaflet positioning. *J Heart Valve Dis* 1995; 4: 313-320.

Arden WA, Strodel WE, Gross DR, Anderson KW: Preincubation of endotoxin with monoclonal anti-lipid A (E5), but not in vivo treatment, inhibits circulatory dysfunction. *Shock* 1995; 4(2):131-138.

Buckmaster MJ*, Hyde GL, **Arden WA**, Nypaver TJ, Endean ED, Kuo CS: An angioscopic method for intraluminal aortic evaluation and stent placement. *J Vasc Surgery* 1995; 21(5): 818-823.

Bellary S*, **Arden WA**, Schwartz RW, Anderson KW: Effect of lipopolysaccharide, leukocytes, and monoclonal anti-lipid A antibodies on erythrocyte membrane elastance. *Shock* 1995; 3(2): 132-136.

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* Indicates first author was graduate student, resident or fellow working under primary or co-supervision of Dr. Arden.

Book Chapters/Proceedings/Monographs

Arden WA: Excitation-Contraction Coupling in Vascular Smooth Muscle, Chapter 29, in Richardson D, Randall D, Speck D (Eds), *Quick Look Medicine, USMLE Step 1, Cardiopulmonary System*, Fence Creek Publishing, Madison, CT, 1999

Arden WA: Circulatory Shock, Chapter 6, pg. 40-45, in Auer J and Stick JA (Eds): *Equine Surgery, Second Edition*, W.B. Saunders, Philadelphia, 1999.

Arden WA: Chronic and Recurrent Abdominal Pain, Chapter 5, pg. 59-66, in Brown CM (Ed): *Problems in Equine Medicine*. Lea and Febiger, Philadelphia, 1989.

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Arden WA: Arthroscopy in the Horse, Journal of Michigan Harness Horseman's Association, December 1988.

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Arden WA: Ischemic Intestinal Injury in the Equine Acute Abdomen: Current Concepts and Research Proceedings, Post-graduate conference for Veterinarians. Michigan State University, 1988.

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Scientific Abstracts

Bernard A, Gellin G, Ochoa J, Mentzer R, **Arden W:** Arginase I gene expression during induced nitric oxide (NO) synthesis in rat aortic vascular smooth muscle. Surgical Forum Program at the 89th Annual Clinical Congress Meeting, Chicago, IL 2003, JACS 2003; 197:S98.

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Maley RH*, Vrettos AM, **Arden WA**, Salley RK, Gross DR: Hemodynamic and cardiodynamic effects of Substance P on isolated rabbit heart. *FASEB J* 6(5):A1753, 1992.

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Arden WA, Dowell RT: Age dependent changes in myocardial susceptibility to global cardiac ischemia. *Cardiovascular Science and Technology: Basic and Applied II*, 1990.

Arden WA, Stick JA: Serum and peritoneal fluid phosphate concentrations as predictors of major intestinal injury in equine colic. *Vet Surg* 18:63, 1989.

Stick JA, Loeffler BS, **Arden WA**, Chou CC: Butorphanol Tartrate: Effects on arterial pressure, jejunal blood flow, vascular resistance, O₂ extraction and O₂ uptake in ponies. *Vet Surg* 18:67, 1989.

Stick JA, Chou CC, **Arden WA**: Flunixin meglumine: Effects on jejunal blood flow, motility, and oxygen uptake. *Vet Surg* 17:43, 1988.

Stick JA, **Arden WA**, Johnston CC, Loeffler BS: The effect of equine analgesics on arterial pressure, jejunal blood flow, and oxygen uptake. Proceedings, Third Equine Colic Research Symposium, University of Georgia, Athens, GA, November 1988.

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Arden WA, Stick JA, Chou CC, Slocombe RJ: Effects of ischemia-reperfusion on equine jejunum: Evaluation of the protective effects of dimethyl sulfoxide, Proceedings "Free Radicals in Biology and Medicine: Ischemia/Reperfusion Injury, University of South Alabama, Mobile, AL, March 1986.

Arden WA, Stick JA, Chou CC, Slocombe RJ: Effects of ischemia-reperfusion on equine jejunum: Evaluation of the protective effects of dimethyl sulfoxide, *Vet Surg* 1986;15(1):111-112.

* Indicates first author was graduate student, resident or fellow working under primary or co-supervision of Dr. Arden.

Scientific Presentations

June 1999: Novel Mediators in Endotoxin- and Sepsis-Induced Vascular Dysfunction. Advances in Veterinary Shock Research, Philadelphia, PA.

June 1999: eNOS Translocation from Caveolae: an Important Mechanism in Sepsis-Induced Endothelial Cell Dysfunction. Fourth International Shock Congress, Philadelphia, PA.

June 1998: Cellular Mechanisms by which CGRP Enhances LPS- and Cytokine-Induced Vascular Nitric Oxide Formation. Twenty First Annual Conference on Shock, San Antonio, TX.

April 1998: CGRP Modulates LPS- and Cytokine -Induced iNOS/NO Formation. CGRP '98: New Horizons in CGRP and Related Peptide Research, Shaftesbury, Dorset, U.K.

June 1997: Neuropeptide CGRP Modulates LPS- and Cytokine-Smooth Muscle NO Formation. Twentieth Annual Conference on Shock, Indian Wells, CA.

April 1997: LPS-Induced Increases in Endothelial Cell Membrane Elastance. *Vascular Biology* '97, New Orleans, LA.

February 1997: LPS-Induced Dysfunction in Endothelial Cell Calcium Signaling. Society for Critical Care Medicine Scientific Meeting, San Diego, CA.

February 1996: Effect of Cardiogenic and Hemorrhagic Shock on Pharmacodynamics of Ampicillin-Sulbactam. Third International Conference on Injury Prevention and Control, Melbourne, Australia.

June 1995: In Vitro Incubation, but Not In Vivo Treatment, with Monoclonal Anti-Lipid A Inhibits the Circulatory Response to Endotoxin. 18th Annual Conference on Shock, Asheville, NC.

April 1995: Early Impairment of Mesenteric Microvascular Responses During Endotoxemia. Experimental Biology, Atlanta, GA.

April 1994: Role of Leukocytes in Lipopolysaccharide-Induced Changes in Erythrocyte Membrane Elastance and Structure. Experimental Biology, Anaheim, CA.

January 1994: Microvascular Actions of Calcitonin Gene-Related Peptide. 4th International Symposium on Resistance Arteries, Warren, VT.

June 1993: Lipopolysaccharide Decreases Rat Erythrocyte Membrane Deformability in Vitro. 16th Annual Conference on Shock, Santa Fe, NM.

June 1993: Portal, Pulmonary and Systemic Plasma CGRP Levels are Elevated During Porcine Endotoxic Shock. 16th Annual Conference on Shock, Santa Fe, NM.

June 1993: Regional Variation in Endotoxin Induced Alterations in Vascular Responsiveness. 16th Annual Conference on Shock, Santa Fe, NM.

November 1992: Monoclonal Antibody Therapy in Endotoxic Shock: Evaluation of Microcirculatory Effects. Annual Scientific Meeting, American College of Veterinary Surgeons, Miami, FL.

November 1992: Bacterial Translocation During Circulatory Shock: Scintigraphic Evaluation in a Porcine Model. Annual Scientific Meeting, American College of Veterinary Surgeons, Miami, FL.

April 1992: Effects of Coronary Perfusion Pressure and Preload on Left Ventricular Myocardial Blood Volume, Compliance and Function. FASEB, Anaheim, CA.

October 1991: Effect of Hypertonic Saline on Cardiopulmonary Function in Endotoxemic Anesthetized Ponies. Annual Scientific Meeting, American College of Veterinary Surgeons, San Francisco, CA.

November 1990: Age Dependent Changes in Myocardial Susceptibility to Global Cardiac Ischemia. Cardiovascular Science and Technology; Basic and Applied II, Louisville, KY.

February 1989: Serum and Peritoneal Fluid Phosphate Concentrations as Predictors of Major Intestinal Damage in Equine Colic. Annual Scientific Meeting, American College of Veterinary Surgeons, Reno, NV.

November 1988: Serum and Peritoneal Fluid Phosphate Concentrations as Predictors of Major Intestinal Damage in Equine Colic. Third Equine Colic Research Symposium, University of Georgia, Athens, GA.

November 1988: The Effects of Ischemia and DMSO on Equine Jejunal Vascular Resistance, Oxygen Consumption, Motility, Potassium Loss and Morphological Appearance. Third Equine Colic Research Symposium, University of Georgia, Athens, GA.

March 1986: Effects of Ischemia-Reperfusion on Equine Jejunum: Evaluation of the Protective Effects of Dimethyl Sulfoxide: Free Radicals in Biology and Medicine, Ischemia/Reperfusion Injury Conference, University of South Alabama, Mobile, AL.

February 1986: Effects of Ischemia-Reperfusion on Equine Jejunum: Evaluation of the Protective Effects of Dimethyl Sulfoxide: Twenty-first Annual Scientific Meeting, American College of Veterinary Surgeons, Orlando, FL.

Invited Presentations

October 2010: Biomedical Research at Public Land Grant Universities: Opportunities and Challenges, 50 Year Anniversary Celebration, Department of Physiology, College of Medicine, University of Kentucky, Lexington, KY.

May 2010: Veterinary Medical Education: Leading the Way Forward, Centenary Celebration, Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia.

February 2010: Presenter, Diversity and Veterinary Medical Education: Building on Our Individual and Collective Strengths, Southeastern Veterinary Student Diversity Matters Symposium, University of Georgia College of Veterinary Medicine, Athens, GA.

March 2009: Panel Discussion, Encouraging Diversity in Veterinary Medical Education, 17th Iverson Bell Symposium, Washington, DC.

July 2004: Panel Discussion, Challenges Facing the Veterinary Medical Teaching Hospital: Determining the Future of Clinical Education in Veterinary Medicine, AAVMC Forum, Philadelphia, PA.

August 2003: Veterinarians in Research, 4th Annual Merck Merial Veterinary Scholars Honors Symposium, Manhattan, KS.

October 2001: Trends in Veterinary Medical Education, Annual National Meeting, Society of Animal Welfare Administrators, Chicago, IL.

September 1997: Endotoxemia, Neuropeptides and Microcirculatory Dysfunction, Department of Veterinary Biosciences, University of Illinois College of Veterinary Medicine, Urbana, IL.

September 1997: Circulatory Shock and Intestinal Barrier Function, Department of Veterinary Clinical Medicine, University of Illinois College of Veterinary Medicine, Urbana, IL.

April 1997: Vascular Dysfunction in Shock and Sepsis, Department of Surgery, University of Tennessee Medical Center-Knoxville, Knoxville, TN.

April 1997: Neuropeptide CGRP and Acute Vascular Dysfunction, Research Day Keynote Address, College of Medicine, University of Tennessee Medical Center-Knoxville, Knoxville, TN.

January 1997: Neuropeptides, NO and Acute Vascular Dysfunction, Department of Surgery, College of Medicine, University of Texas Health Sciences Center at San Antonio, San Antonio, TX.

November 1996: Vascular Dysfunction in Shock and Sepsis, Annual Scientific Meeting, American College of Veterinary Surgeons, San Francisco, CA.

October 1996: Neuropeptide CGRP, NO and Sepsis-Induced Vascular Dysfunction, Department of Physiology and Biophysics, College of Medicine, University of Louisville Health Sciences Center, Louisville, KY.

September 1996: Vascular Pathophysiology and Equine Diseases, University of Kentucky Department of Veterinary Science, Gluck Equine Research Center, Lexington, KY.

January 1995: Veterinary Surgery and Vascular Biology, University of Missouri-Columbia College of Veterinary Medicine and the Dalton Cardiovascular Research Center, Columbia, MO.

August 1994: The Role of Vascular Biology in Veterinary Surgery, Purdue University College of Veterinary Medicine, West Lafayette, IN.

July 1994: Role of Lipopolysaccharide and Leukocytes in Sepsis-Induced Changes in Erythrocyte Membrane Elastance and Structure, University of Kentucky College of Pharmacy, Lexington KY.

July 1993: Vasoactive Neuropeptides and Septic Shock, University of Kentucky College of Medicine, Department of Surgery, Lexington, KY.

March 1993: Role of Neuropeptide CGRP in Vascular Response to Sepsis, University of Kentucky College of Medicine, Department of Physiology and Biophysics, Lexington, KY.

1989: A Physiologic and Pathologic Evaluation of Ischemia-Reperfusion Injury to the Equine Jejunum, Michigan State University College of Veterinary Medicine, East Lansing, MI.

1988: Radiographic Evaluation of the Equine Acute Abdomen, Michigan State University College of Veterinary Medicine, East Lansing, MI.

1988: Serum and Peritoneal Fluid Phosphate Concentration in Evaluation of Equine Acute Abdomen, Michigan State University College of Veterinary Medicine, East Lansing, MI.

December 1988: Effects of Ischemia-Reperfusion and Dimethyl Sulfoxide on Equine Jejunum. Cardiovascular Research Group, Department of Physiology and Biophysics, University of Kentucky Medical School, Lexington, KY.

November 1988: Evaluation of the Equine Acute Abdomen, Principal Speaker, Michiana Veterinary Medical Association, South Bend, IN.

February 1988: Endoscopic and Radiographic Evaluation of the Equine Head and Neck, Principal Speaker, National College of Veterinary Medicine, San Jose, Costa Rica.

January 1988: Diagnosis of Surgical Conditions of the Equine Head and Neck, Principal Speaker, National College of Veterinary Medicine, San Jose, Costa Rica.

November 1987: Progress in Equine Colic Research, Principal Speaker, Tri-County Horse Association, MI.

September 1987: Medical Management of Acute Abdominal Pain in the Horse, Principal Speaker, Southwest Michigan Veterinary Medical Association, Kalamazoo, MI.

June 1987: Assessment and Medical Management of Acute Abdominal Pain in the Horse. Principal Speaker, South Carolina Association of Veterinarians Annual Meeting, Hilton Head, SC.

January 1987: Ischemic Intestinal Injury in the Equine Abdomen: Current Concepts and Research. Postgraduate Conference for Veterinarians, Michigan State University, East Lansing, MI.

November 1986: Cardiovascular Diseases of the Horse. Principal Speaker, UMPHU University, Santo Domingo, Dominican Republic.

May 1986: Intestinal Ischemia-Reperfusion Injury in the Equine Acute Abdomen. Cornell University Faculty Seminar Series, Cornell University, Ithaca, NY.

January 1986: Ovarian Tumors and Ovariectomy in the Mare: Postgraduate Conference for Veterinarians, Michigan State University, East Lansing, MI.

1986: Ischemia-Reperfusion of Equine Jejunum: Evaluation of Protective Effects of Hydroxyl Radical Scavenging, Michigan State University College of Veterinary Medicine, East Lansing, MI.

1985: Circulating Cardiodepressants in Shock, Michigan State University College of Veterinary Medicine, East Lansing, MI.

1985: Pathophysiology of Ischemic Intestinal Injury, Michigan State University College of Veterinary Medicine, East Lansing, MI.

1984: Techniques and Complications of Ovariectomy in the Mare, Michigan State University College of Veterinary Medicine, East Lansing, MI.

Visiting Professorships

September 1997: College of Veterinary Medicine, Department of Veterinary Biosciences, University of Illinois, Urbana, IL.

April 1997: College of Medicine, University of Tennessee Medical Center, Knoxville, TN.

January 1997: University of Texas Health Sciences Center at San Antonio, Department of Surgery, College of Medicine, San Antonio, TX.

October 1996: University of Louisville Health Sciences Center, Department of Physiology and Biophysics, College of Medicine, Louisville, KY.

January 1995: University of Missouri College of Veterinary Medicine, Columbia, MO.

August 1994: Purdue University College of Veterinary Medicine, West Lafayette, IN.

January 1988: National College of Veterinary Medicine, San Jose, Costa Rica.

November 1986: UMPHU University College of Veterinary Medicine, Santo Domingo, Dominican Republic.

May 1986: Cornell University College of Veterinary Medicine, Ithaca, NY.

Instruction

Post Doctoral/Residency

University of Kentucky

Research Fellowship Supervision: Division of General Surgery

1998-00: Andrew Bernard, MD, PGY4-5, Co-supervision

1996-97: Chet Yavorski, MD, Vascular Surgery Fellow, PGY 6

1995-96: Velupillai Wignakumar, MD, Trauma Surgery Fellow, PGY 6

1992-93: Lisa Beihn, MD, General Surgery PGY4

1991-92: Walter Pofahl, MD, General Surgery PGY4

Director, Resident Surgical Education Laboratories: Division of General Surgery (1993-2000)

Basic Surgical Skills Dry and Wet Laboratory: 10 hour laboratory with direct supervision of residents

1996-1997: 22 PGY-1 residents

1995-1996: 20 PGY-1 residents

1994-1995: 20 PGY-1 residents

1993-1994: 6 PGY-1 residents

Techniques in Surgical Stapling Laboratory: 8 hour laboratory with direct supervision of residents

1994-1995: 10 PGY-3,4 residents

Techniques in Liver Transplantation Laboratory: 10 hour laboratory with direct supervision of residents

1994-1995: 6 PGY-4,5 residents

Michigan State University

Clinical Supervision: Department of Large Animal Clinical Sciences

Equine Surgery Residency: Co-supervision

1987-89: Ian Fulton, DVM

1986-89: James Belknap, DVM; Pat Provost, DVM

Research Supervision: Ingham County Emergency Medicine Residency Research Program, Lansing, MI

1989: 1 resident

1988: 1 resident

Professional

University of Illinois

College of Veterinary Medicine, DVM Program: 2000-2004

VCM 301: Clinical and Laboratory Practice

VCM 320: Veterinary Clinical Medicine Consortium

University of Kentucky

College of Medicine, MD Program: 1993-2000

MD 810: Physicians, Patients and Society I

1997-1998: Preceptor, 36 hours

1995-1996: Preceptor, 36 hours

1993-1994: Preceptor, 48 hours

MD 820: Physicians, Patients and Society II

1996-1997: Preceptor, 36 hours

1994-1995: Preceptor, 36 hours

PGY 818: Human Function

1994: Preceptor, Cardiovascular Case Studies

Summer Student Research Program

1996: 2 students; William Riordan, Marc Ward

1995: 1 student; Alex Gloria

Michigan State University

College of Veterinary Medicine, DVM Program: 1983-1989

ANT 514: Veterinary Comparative Anatomy

1984-1989: 2 hour lectures/year

VM 586: Digestive System II

1986-1989: Lecturer, 6 hour lectures/year

VM 588: Principles of Surgery II

1984-1989: Lecturer, 6 hour lectures/year

VM 592: Musculoskeletal System II

1985-1989: Lecturer, 6 hour lectures/year

LCS 650: Medicine and Surgery Clinics, Equine Division

1987-1989: Moderator

LCS 690: Special Problems in Equine Medicine

1988: 2 students

Equine Surgery: Clinical Groups

1983-1989: Daily Tuition

Equine Medicine and Surgery: Tutorial Groups

1983-1989: Daily Tuition

Graduate

University of Kentucky

College of Medicine, Department of Physiology: 1993-2000

PGY 412G: Systems Physiology

1999: 12 hour lectures, Circulatory Physiology

1998: 12 hour lectures, Circulatory Physiology

1997: 12 hour lectures, Circulatory Physiology

1995: 9 hour lectures, Circulatory Physiology

1994: 3 hour lectures, Circulatory Physiology

PGY 502: Systems, Cellular and Molecular Physiology

1996: 6 hour lectures, Vascular Biology and Microcirculation

1995: 6 hour lectures, Vascular Biology and Microcirculation

1994: 6 hour lectures, Vascular Biology and Microcirculation

PGY 560: Pathophysiology

1998: 3 hours, Circulatory Pathophysiology

1995: 3 hours, Circulatory Pathophysiology

1994: 3 hours, Circulatory Pathophysiology

PGY 562: Independent Research in Physiology

1992: Supervision of 1 student, Cynthia Colson

PGY 604: Advanced Cardiovascular Physiology

1997: 10 hours, Peripheral Vascular Biology/Physiology

1995: 5 hours, Physiology of the Microcirculation

1993: 1 hour, Physiology of Circulatory Shock

PGY 602 (630): Readings in Cellular, Molecular and Systems Physiology

1996: 3 hours, Vascular Biology and Microcirculatory Physiology

1995: 3 hours, Vascular Biology and Microcirculatory Physiology

1994: 3 hours, Vascular Biology and Microcirculatory Physiology

College of Medicine, Department of Physiology: 1996,1999

PHA 634: Advanced Cardiovascular Pharmacology

1999: 3 hours, Integrated Control of Cardiovascular Function

1996: 3 hours, Integrated Control of Cardiovascular Function

Graduate Committees

University of Kentucky

College of Engineering, Department of Chemical Engineering

1995-97: Ph.D. Committee Member, Anne Grosvenor

1993-95: M.S. Committee Member, Mai-Loon Gee

1992-93: M.S. Committee Member, Srithal Bellary

College of Nursing

1995-2000: Ph.D. Committee Member, Karen Johnson

1995-2000: Ph.D. Committee Member, Steven Talbert

College of Medicine, Department of Physiology

1996-2000: Ph.D. Committee Member, Gregory Graf

College of Pharmacy, Department of Pharmacology and Experimental Therapeutics

1996-97: Ph.D. Committee Member, Brady Rosenbluth

Undergraduate*University of Kentucky***Summer Research Student Program**

1999: Warisara Manuel; 1998: Dominique Talbert; 1994: Andres Medina, Joel Thompson

1993: Chad Massey, Terri Sell, Joel Thompson

Research Externship, DePauw University, Indiana

1998: Uri Klyachkin; 1997: Rebecca Achterhoff

High School*University of Kentucky Sponsored Programs***Fayette County Experience Based Career Education (EBCE)**

1999: Carrie Farrar; 1998: Sarah Downs; 1997: Catherine Bast; 1994: Christy Smith;

1992 and 93: Joel Thompson

Minority Apprenticeship Research Program

1997: Iman Perry; 1996: Kisha Dicks