

NANCY AYERS RICE

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ACADEMIC POSITIONS

2016- present	Western Kentucky University Bowling Green, Kentucky <i>Professor</i> Department of Biology
2008 – 2016	Western Kentucky University Bowling Green, Kentucky <i>Associate Professor</i> Department of Biology
2003- 2008	Western Kentucky University Bowling Green, Kentucky <i>Assistant Professor</i> Department of Biology
2010-2011; 2016	Harlaxton College Grantham, England <i>Visiting Professor – Scholar in Residence</i>
2001-2002	Front Range Community College Westminster, Colorado <i>Adjunct Instructor</i> Department of Science and Technology

EDUCATION

2014- present	Western Kentucky University Bowling Green, Kentucky M.P.H – in progress
2000- 2002	University of Colorado Boulder, Colorado Postdoctoral Research Associate Department of Molecular, Cellular and Developmental Biology
Summer 1996	National Science Foundation Summer Institute in Japan Research Fellow University of Tokyo, Komaba

1994 - 1999	University of Tennessee, Memphis Memphis, Tennessee Ph.D. in Biochemistry
1989-1993	Western Kentucky University Bowling Green, Kentucky Major: Recombinant Genetics Minor: English Literature (Study abroad -Oxford, England Fall 1990) B.S., <i>cum laude</i>

HONORS AND AWARDS

2014 - Ogden College of Science and Engineering Women in Science and Engineering (WISE) Award
 2013 - Western Kentucky University Faculty Excellence in Public Service Award
 2013 - Ogden College of Science and Engineering Faculty Excellence in Public Service Award
 2010 - WKU's Visiting Faculty, Harlaxton College, Grantham England
 2007 - Ogden College of Science and Engineering Faculty Excellence in Research/Creativity Award
 2006 - American Society of Biochemistry and Molecular Biology Undergraduate Faculty Travel Award
 2002- Lymphangioleiomyomatosis (LAM) Foundation Travel Award
 2000- American Society of Biochemistry and Molecular Biology Travel Award
 1999- National Research Council Science Policy Internship - Commission on Life Sciences
 1999- American Society of Biochemistry and Molecular Biology Travel Award
 1997 - National Science Foundation Summer Institute in Japan Review Panel participant
 1996- National Science Foundation Summer Institute in Japan Fellowship
 1995- Sleep Research Society Travel Award
 1989-1993
 Western Kentucky University –Presidential scholarship (highest academic scholarship awarded by WKU)
 President's List (2 semesters)
 Dean's List (6 semesters)
 1989 - Warren Co. Junior Miss Scholarship

GRANTS AND FELLOWSHIPS

Funded

Role: P.I.
 "Epigenetic regulation of renin angiotensin system (RAS) genes linked to hypertension"
 Kentucky Academy of Sciences
 03/01/2015 -03/31/2016; \$4866

Role: P.I.
 "Prevalence and Mechanism of Essential Hypertension in Kasigau, Kenya"
 WKU-Research and Creative Activities Program (RCAP)
 01/01/14-05/30/15; \$4,960

Completed

Role: P.I.
 "The Molecular Epidemiology of Essential Hypertension in Kasigau, Kenya"
 NIH-NCRR P20 RR16481
 Kentucky INBRE – AREA award
 05/01/11-04/30/13; \$50,085

Role: P.I.
 "Prevalence and Mechanism of Essential Hypertension in Kasigau, Kenya"
 WKU-Research and Creative Activities Program (RCAP)
 01/01/12-05/30/13; \$9,692

Role: P.I.
“The Role of Nitric Oxide Signaling in Myofibroblast Function”
NIH-NCRR P20 RR16481
Kentucky INBRE Research Proposal Subcontract
05/01/09-04/30/11; \$105,049

Role: PI
“Mechanical Stress and Myofibroblast Function: Implications in Pulmonary Fibrosis Pathology”
NIH-NHLBI R15 AREA
03/01/07 – 02/28/10; \$204,750 No Cost Extension requested to 2/28/2011
Role: Co-Investigator; Dr. Clyde Herreid, PI (SUNY at Buffalo) NSF-CCLI
Phase II
“Interactive Case Study Teaching in Large Classrooms”
01/01/07-12/31/09; \$5000

Role : PI
“Muscle adaptation in response to voluntary exercise in phosphorylase kinase deficient mice”
WKU Research Foundation
Faculty Fellowship
10/01/06-09/30/07; \$2000

Role: P.I.
“Mechanisms of Transcriptional Coordination among Phosphorylase Kinase Genes”
NIH-NCRR P20 RR16481
Kentucky INBRE Research Proposal Subcontract
08/06/04 – 04/30/09; \$530,740

Role: PI
NIH-KBRIN Faculty Fellowship **Renewal**
“Nitric oxide mediated mechanisms in regulating pulmonary myofibroblasts”
02/10/04 – 07/31/04; \$10,000

Role: PI
NIH-KBRIN Faculty Fellowship
“Nitric oxide mediated mechanisms in regulating pulmonary myofibroblasts”
05/01/03 – 08/31/03; \$10,000

Role: PI
Junior Faculty Research Grant
Western Kentucky University Research Foundation
“Role of Nitric Oxide Signaling in Myofibroblast Differentiation”
03/11/03 – 03/10/04; \$ 4000

Prior to WKU
Role: PI
F32 National Research Service Award – NIH / NHLBI
01/01/02-12/31/04; \$117,024 (declined last two years)

Role: PI
Lymphangi leiomyomatosis (LAM) Foundation Pilot Project Award
01/01/01 –12/31/01; \$50,000

Submitted – Not Funded

Role: P.I.

“Identification of Genetic Variants that Influence Blood Pressure and Cardiovascular Disease Risk”

Kentucky Science and Engineering Foundation

07/01/2015-06/30/2016; \$30,000

07/01/2016 – 06/30/2017 (resubmission)

Role: PI

“The Molecular Epidemiology of Essential Hypertension in Kenya”

NIH-NHLBI R15 AREA

09/01/13 – 08/31/2016; \$432,186

Role: PI

“Nitric Oxide Signaling in Lymphangioliomyomatosis”

LAM Foundation Pilot Project Award

01/01/07-12/30/07; \$25,000

Role: PI

“Nitric Oxide Signaling in Lymphangioliomyomatosis”

NIH-NHLBI R21 Exploratory / Developmental Award

07/01/07-06/30/09; \$373,460

Role: PI

Ky-EPSCoR Research Enhancement Grant

“Developmental Regulation of Phosphorylase Kinase Gene Expression”

06/01/06 – 05/31/07; \$25,000

RESEARCH MENTORSHIP

Undergraduate

Western Kentucky University

- Brent Harney – August 2016 - present
- Christopher McDaniel – January 2016 – present
- Lindsey Porter – August 2012 – May 2014; [Gatton Academy of Math and Science student]
- Addie Dodson – August 2012 – May 2014; **Honor’s Thesis: Correlation of Environmental Risks with the Prevalence of Essential Hypertension and Chronic Cardiac Disease in Kasigau, Kenya (Defended with Distinction); Awarded L.Y. Lancaster Award for Excellence in Pre-medical Education**
- Spencer Wright – August 2012 – May 2014; **Honor’s Thesis: Allelic Variability in the CYP11B2 C344T Single Nucleotide Polymorphism from a Cohort of East Africans; Awarded FUSE grant from WKU Research Foundation**
- Lindsay Williams – January 2012- May 2012 ; **Honor’s Thesis: The Prevalence of Essential Hypertension in Kasigau, Kenya**
- Andrea Eastes – August 2011- May 2012 [Gatton Academy of Math and Science student]
- Erin Walch - August 2011- May 2012 [Gatton Academy of Math and Science student]
- Meredith Clouse – Summer research student from Rose Hulman Institute of Technology; June –August 2011; pursuing M.D. at University of Louisville
- Allison Smith – January 2010 – May 2011; **Honor’s Thesis: Assessment of Prenatal Care and Perinatal Outcomes in Kasigau, Kenya**
- Andrew Cardwell – June 2010 – August 2011
- Claci Ayers – August 2009 – May 2010 [Gatton Academy of Math and Science student]
- Ashley Mefford – August 2006 – May 2010; **Honor’s Thesis: Voluntary Exercise in Phosphorylase Kinase Deficient Mice; Awarded WKU Outstanding Biology Student 2010**; pursuing M.D. at University of Louisville
- Margaret Clouse – Summer research student from Rose Hulman Institute of Technology; June –August 2009; pursuing Ph.D. from

- Lauren Parsons – August 2007 – May 2009; graduated D.D.S. degree at University of Louisville
- Olivia Price – April 2007 – May 2009; pursuing P.A. degree at Samuel Merritt University
- Matthew Kirk – August 2008-December 2008 [Gatton Academy of Math and Science student]
- Jameson Mattingly – January 2007 – May 2008; Graduated M.D. at University of Louisville
- Joseph Chavarria-Smith – August 2005 – May 2009; Awarded **Larry Gleason Award for Outstanding Undergraduate Research** and the **Barry W. Goldwater Scholarship** in 2006; Awarded **Kentucky Academy of Sciences –1st place Undergraduate competition (Cell and Molecular Division)-2007** and **Outstanding Biotechnology Student in 2008 and 2009**; pursuing Ph.D. at University of California-Berkeley
- Joni Winchester – January 2006 – December 2006; Pharm.D. from Creighton University
- Natalina Elliott – Western Kentucky University (05/2004 – 05/2006); Awarded **WKU Outstanding Biology Student 2006**; Ph.D. from Vanderbilt University
- Jessica Hancock – Western Kentucky University (08/2004- 05/ 2006); Graduated D.D.S. from University of Louisville Dental School
- Deborah Cook [Wolfe] – (01/2006 – 05/2006) Pursuing Ph.D. from University of Kentucky
- Michelle Dodson – (11/05 – 05/06)
- James Ralph Heltsley –(01/04- 05/05); Graduated D.O. from Pikeville College of Osteopathic Medicine
- Mark King –(01/04-05/05); Awarded **WKU Outstanding Biotechnology Student**; graduated D.D.S. at Univ. of Kentucky
- Tim Shehan –(01/04 –05/05) – pursuing Ph.D. from University of Wisconsin
- Rebecca Sharp –(08/04-05/05); graduated D.D.S. from the University of Louisville
- John Handshoe –(8/03 – 05/04); Res. Assoc.– Genetic Diagnostics, Inc.
- Angela Thacker –(8/03 – 05/05); M.A.in Gerontology– Univ. of Kentucky; Pursuing D.O at Pikeville College of Osteopathic Medicine

University of Colorado

- Laura Holton – University of Colorado, Boulder (8/00 – 12/02); received M.D. from Michigan State University (Howard Hughes Medical Institute -Undergraduate Research Opportunities Participant)

Graduate - Thesis

- Aiste Dobrovolskiate – August 2015 – present
- Jesse Nugent – August 2015 - present
- Julia Freeman – M.S. awarded December 2013; **Thesis: Single Nucleotide Polymorphisms linked to Essential Hypertension in Kasigau, Kenya**
- Jon Faughn – Western Kentucky University; M.S. awarded August 2011; **Thesis: Regulation of Endothelial Nitric Oxide Synthase Localization in Pulmonary Myofibroblasts**
- Dominic Ochwangi – Visiting Research Scholar from University of Nairobi; M.Sc. candidate- August 2008- February 2009; **Thesis: Transcriptional Regulation of the NOS₃ Promoter in Pulmonary Myofibroblast Differentiation and Implications in Pulmonary Fibrosis**
- Kishore Polireddy – Western Kentucky University; M.S. awarded August 2009; **Thesis: Searching for Binding Partners for the Novel PHKG1 Variant g181**; pursuing Ph.D. at University of Kansas Medical Center
- Clara Figueirinhas – Western Kentucky University; M.S. awarded August 2009; **Awarded Kentucky Academy of Sciences –1st Place Graduate Research competition (Zoology) – 2007; Dillard/Hoyt Graduate Student Award – 2008; Thesis: Assessment of the Endangered Species *Podarcis Carbonelli* on Microgeographic Scale: A Molecular, Morphological, and Physiological Approach.**; pursuing Ph.D. at Miami of Ohio University
- Soleil Archila – Western Kentucky University (8/03 – 08/04) M.S. awarded August 2004; **Thesis: Identification of Phosphorylase Kinase Alpha Binding partners in Skeletal Muscle**; pursuing Ph.D. at University of Calgary

Graduate – Non-thesis

- Caitlyn Walsh - current

- Kristen Knapp – M.S. awarded May 2013
- Kiranmai Bangalore - M.S. awarded May 2006

Post-doctoral Fellows

- Bethel Sharma, Ph.D. – Nov. 2007- August 2009; Assistant Professor in Chemistry – University of the South, Sewanee, Tennessee

TEACHING EXPERIENCE

- Introductory Biology (Non-majors)
- Introductory Biology -Cells, Genetics, Biochemistry (majors and honors)
- Introduction to Molecular Biology and Cell (honors)
- Cell Biology (graduate, online, honors)
- Cell Biology lab (process-oriented)
- Adv. Cell Biology (graduate, online)
- Molecular Basis of Cancer (online)
- Medicine in Kenya (service-learning study abroad)
- Introduction to Environmental Science (non-majors)
- The British Contribution to Science (study abroad)

INVITED TALKS

University of Nairobi; Department of Medical Physiology (May 31, 2016) The genetic epidemiology of essential hypertension in rural Kenya : maladaptive or inconsequential?"

University of Louisville; Department of Epidemiology (April 17, 2014) "The genetic epidemiology of essential hypertension in rural Kenya : maladaptive or inconsequential?"

Western Kentucky University; Department of Biology (September 27, 2013) "The genetic epidemiology of essential hypertension in rural Kenya : maladaptive or inconsequential?"

Kentucky Academy of Sciences Annual Meeting (October 19, 2012) – "Undergraduates in International Research in Global Health"

Kentucky Girls STEM Collaborative Conference – Panelist speaker (October 12, 2012)

Murray State University; Department of Biological Sciences (February 17, 2012) – "Nitric Oxide Regulation of Myofibroblasts: Implications for Pulmonary Fibrosis Therapeutics"

Morehead University; Department of Biology and Chemistry (April 23, 2010) – "Alternative splicing of the glycogenolytic enzyme phosphorylase kinase yields the smallest, active kinase known"

University of Southern Indiana; Department of Biology (2004) – "Myofibroblasts: Molecular Crossdressers"

The LAM Foundation, LAMposium (2002) – "Transcriptional regulation of skeletal muscle myosin expression in pulmonary myofibroblasts"

University of Colorado Health Science Center; Division of Pulmonary Sciences (2001) – "Myofibroblasts: Molecular Crossdressers"

Bemidji State University; Department of Chemistry (2000) - "Pathways to Policy Careers: The National Academy of Science's Policy Intern Programs"

Western Kentucky University; Department of Biology (1999) - Phosphorylase Kinase: A new paradigm in skeletal muscle architecture"

SOCIETY MEMBERSHIPS

American Physiology Society (2012-present)
Western Kentucky University Sigma Xi (2003 - present)
The Kentucky Academy of Science (2003 - present)
American Society of Cell Biology (2001- present)
American Society of Biochemistry and Molecular Biology (1998-present)
The Protein Society (2002-2003)
Sleep Research Society (1994)
Beta Beta Beta Biological Honor Society; Mu Gamma (1991-1993; President 1992-1993)

PROFESSIONAL SERVICE

Departmental Service

Graduate Curriculum committee – 2014 - present
Vertebrate Physiologist Assistant Professor Search Committee- Chair (2011)
Ad hoc IB committee – (2009 – 2012)
Biology Office Associates Search Committee - (2009)
Geneticist Search Committee – member; candidate host (2010)
Developmental Biologist Search Committee – member; candidate host (2010)
Curriculum Committee – member (2004-2006); Chair (2006 – 2009)
Quality Enhancement Plan Committee – member (2006 – 2009)
Biotechnology Certification Committee – Member (2004-2010)
Pre-professional Student Advising Committee – (2004 – present)

2009-2010 - 66 advisees; 16 evaluation committees; Chair of 6

2011-2012 – 67 advisees; 6 evaluation committees; Chair of 2

2012-2013 – 53 advisees; 12 evaluation committees; Chair of 7

2013-2014 – 61 advisees; 14 evaluation committees; Chair of 8

Sygen Professor Search Committee – member (2004)
Ad hoc Biology 120 curriculum revision committee – Chair; *Ad hoc*
Biology 121 curriculum revision committee – member
Biotechnology Center Coordinator Search Committee- member (3X)
Neuroscientist Search Committee – member (2004)

University Service

General Education / Colonnade committee – Ogden College Senate representative – 2014 - present
Gatton Academy Admissions interview committee - 2014
QEP Advisory committee- Assessment working group – 2014 – 2015
University Faculty Awards review committee – 2014, 2015
WKU Partners in Caring: Medicine in Kenya (PiC:MiK) – Program Creator and Leader, 2006 - present
Study Abroad and Global Learning (SAGL) Director Search Committee - member (2013-2014)
Ogden College At-Large WKU Faculty Senate Representative – 2012 - present
WKU ALIVE CCP Faculty Advisory Board – June 2012 – present
WKU Sustainability Conference, Barren River Lake State Park – round-table speaker June 9, 2010
WKU Engaging the Spirit Conference – Discussion Leader, August 20, 2009
WKU Institute for Citizenship and Social Responsibility (ICSR) Advisory Board (2009- 2012)
WKU's General Education Review Task Force – 2008 - 2011
WKU Presidential Scholarships review/interview committee – 2009, 2010, 2012, 2013, 2014, 2015
ARTP Biotechnology Center Director – July 1, 2009 – June 30, 2010; July 1, 2011- June 30, 2013
ARTP Biotechnology Center Co-Director, June 1, 2008 – May 31, 2009; July 1, 2010 – June 30, 2011
Ogden College Sabbatical Review Committee (2009)
Gatton Academy Search Committee – Director of Research, Internships, and Scholarships (2008) Honors College –Distinct Dialogues (Fall 2007, 2008, 2011) “Stem Cells” Promise, Perils and Politics” WKU Political Engagement Project (PEP) Team – 2007-2009
University Curriculum Committee – 2007-2009

Undergraduate Student Research Conference Task Force – 2006- 2007
Ogden College Curriculum Committee – 2006-2009
Ogden College Faculty Awards Committee – 2006
VAMPY instructor - 2005
Girls in Science Day instructor - (2003-2006, 2009, 2012)
Science Olympiad – Cell Biology (2004, 2006, and 2008)
Potter Gray Science Day (2005, 2012, 2014)

Professional Service

American Society of Biochemistry and Molecular Biology – representative for Biochemistry and Molecular Biology CourseSource Learning Frameworks Workshop (an HHMI initiative) – July 29-31, 2014
American Society of Biochemistry and Molecular Biology – Program accreditation committee – 2013-present
Council on Postsecondary Education General Education Workgroup - Natural Sciences, May 18-20, 2010
American Society of Biochemistry and Molecular Biology – Undergraduate poster competition judge (2008, 2009)
Western Kentucky University Sigma Xi Secretary/Treasurer (2004-2005)
Western Kentucky University Sigma Xi Vice-President (2005-2006) Western Kentucky University Sigma Xi President (2006-2007)
National Sigma Xi Student Research Competition Judge - 2005
National Sigma Xi Conference – Southeast Region Teller – 2005
Kentucky Academy of Science – Molecular and Cellular Biology Section Secretary
Kentucky Academy of Science – Molecular and Cellular Biology Section President
Kentucky Academy of Science Grant Disbursement Committee (2007, 2008)

Reviewer – textbook/manuscript

British J. of Medicine and Medical Res. – ad hoc reviewer
Journal of the Ky Acad. of Science – ad hoc reviewer
National Center for Case Study Teaching in Science – ad hoc reviewer
Intl. J. of Cancer – ad hoc reviewer McGraw-Hill
Hill Biology textbook reviewer W.H. Freeman Biology textbook reviewer
Benjamin Cummings Cell textbook reviewer
Prentice Hall Biology textbook reviewer
Academic Press/Elsevier – textbook reviewer (Biochemistry Case Studies)
Sinauer Publishing – textbook reviewer

Reviewer – fellowships and grants

Institute of International Education – Reviewer for Boren Fellowships, 3 year appt. (2014-2016)
WKU FUSE grant reviewer – 2012, 2013, 2014
NIH-National Institute of General Medicine – SCORE awards, March 2011
Research Corp for Science Advancement - Cottrell College Science Awards (2011, 2012)
NIH-National Heart, Lung, Blood Institute –R13 Study Section – December 2008
Kentucky Academy of Science grant reviewer (2007, 2008)

PUBLICATIONS

Peer-reviewed papers

In preparation

18. Williams, L. [§], Freeman, J.C. [§] Wright, S[§]., Porter, L. [§], Rice, N.A. (201x) Polymorphic haplotypes of renin angiotensin genes correlate with high prevalence of hypertension in a cohort of rural East Africans. *International Journal of Molecular Epidemiology and Genetics*, In preparation.
17. Sharma, B.V., Rowland, N.S., Faughn, J. [§]Eastes, A. N. [§], Walch, E.M. [§] and **Rice, N.A.** (201x) Pulmonary proto-myofibroblast differentiation increases endothelial nitric oxide synthase

expression and cell survival. *Cell and Mol Biol. Lett.* In preparation

Published

16. Knapp, K.L.[§] and Rice, N.A. (2015) Human Coinfection with *Borrelia burgdorferi* and *Babesia microti* in the United States. *J. Parasit. Res.* 2015: 587131. Published online 2015 Nov 30. doi: [10.1155/2015/587131](https://doi.org/10.1155/2015/587131)
15. Sharma, B.V., Rowland, N.S., Clouse, M.M.,[§] and **Rice, N.A.** (2014) An improved bioassay for measuring low levels of nitric oxide in cultured pulmonary myofibroblasts. *Advances in Biological Chemistry*, **4**, 214-221.
14. Mefford, A.M.,[§] Ayers, C.C.,[§] Rowland, N.S. and **Rice, N.A.** (2013) The *phk1* deficient I/LnJ mouse exhibits endurance exercise deficiency with no compensatory changes in glycolytic gene expression. *Open Journal of Molecular and Integrative Physiology*, **3**, 87-94. doi: 10.4236/ojmpi.2013.32014
13. Kang, H. et al. (2012) Gender differences in student performance in large lecture classrooms using personal response systems ("clickers") with case studies. *Learning, Media and Technology* **37**:1, 53-76. (Large pedagogical work from NSF CCLI grant– listed as Associate Author due to journal limitation of author number)
12. Wolter, B. et al (2011) Students' perceptions of using personal response systems ("clickers") with cases in science. *J. College Science in Teaching*. **40**:4, 14-19. (Large pedagogical work from NSF CCLI grant– listed as Associate Author due to journal limitation of author number)
11. Lundeberg, M.A., Kang, H., Wolter, B., delMas, R., Armstrong, N., Borsari, B., Boury, N., Brickman, P., Hannam, K., Heinz, C., Horvath, T., Knabb, M., Platt, T., **Rice, N.**, Rogers, B., Sharp, J., Ribbens, E., Maier, K.S., Deschryver, M., Hagley, R., Goulet, T., and Herreid, C.F. (2011) Context matters: increasing understanding with interactive clicker case studies. *Education Tech Research Dev* **59**:645-671.
10. Winchester, J. S.[§], Rouchka, E.C., and **Rice, N.A.** (2007) *In silico* characterization of phosphorylase kinase: evidence for an alternate intronic polyadenylation site in PHKG1. *Mol. Genet. Metab.* **92**: 234-242.
9. Archila, S.,[§] King, M.A.[§], Carlson, G.M. and **Rice, N.A.** (2006) The cytoskeletal organizing protein Cdc42-interacting protein 4 associates with phosphorylase kinase in skeletal muscle. *Biochem. Biophys. Res. Comm.* **345**, 1592-1599.
8. **Rice, N.A.** and Leinwand, L.A. (2003) Skeletal Myosin Heavy Chain Function in Cultured Lung Myofibroblasts *J. Cell Biol.* **163**: 119-129.
7. Andreeva, I.E., **Rice N. A.**, and Carlson, G.M. (2002) The regulatory alpha subunit of phosphorylase kinase may directly participate in the binding of glycogen phosphorylase. *Biochemistry (Moscow)* **67**, 1197-1202.
6. **Rice, N.A.**, Nadeau, O.W., Yang, Q. and Carlson, G.M. (2002) The calmodulin-binding domain of the catalytic gamma subunit of phosphorylase kinase interacts with its inhibitory alpha subunit: Evidence for a Ca²⁺-sensitive network of quaternary interactions. *J. Biol. Chem.* **277**, 14681-14687.
5. **Rice, N.A.** and Carlson, G.M. Phosphorylase kinase. *Wiley Encyclopedia of Molecular Medicine*. Vol.4 John Wiley and Sons, Inc., New York, 2001, pp. 2487-2490.
4. **Ayers[Rice], N.A.**, Wilkinson, D.A., Fitzgerald, T.J. and Carlson, G.M. (1999) Self-association of the alpha subunit of phosphorylase kinase as determined by two-hybrid screening. *J. Biol. Chem.* **274**, 35583-35590.
3. **Ayers [Rice], N.A.**, Nadeau, O.W., Read, M.W., Ray, P. and Carlson, G.M. (1998) Effector-sensitive crosslinking of phosphorylase-b kinase by the novel crosslinker 4-phenyl-1,2,4-triazoline-3,5-dione. *Biochem. J.* **331**, 137-141.
2. **Ayers[Rice], N.A.**, Kapás, L. and Krueger, J.M. (1997) The inhibitory effects of N -nitro-L-arginine methyl ester on nitric oxide synthase activity vary among brain regions in vivo but not in vitro. *Neurochem. Res.* **22**, 81-86.
1. **Ayers[Rice], N.A.**, Kapás, L. and Krueger, J.M. (1996) Circadian variation of nitric oxide synthase activity and cytosolic protein levels in rat brain. *Brain Res.* **707**, 127-130.

Peer-reviewed instructional materials

(parenthetical = # of times accessed in last year)

4. **Rice, N.A.** (2010) The Wolfman: A Mendelian Monster? The Chromosomal Basis of Heredity *National Center for Case Study Teaching in Science*. http://sciencecases.lib.buffalo.edu/cs/collection/detail.asp?case_id=480&id=480 (1,827)
3. Rice, N.A. (2010) Face the Fats: The Biochemistry of Lipids *National Center for Case Study Teaching in Science*. http://sciencecases.lib.buffalo.edu/cs/collection/detail.asp?case_id=592&id=592 (2,176)

2. Davis, C.D. and **Rice, N.A.**, (2009) Another Can of Bull? Do Energy Drinks Really Provide a Source of Energy? *National Center for Case Study Teaching in Science Collection*. http://www.sciencecases.org/energy_drinks_clicker/prelude.asp. (2,695)
1. **Rice, N.A.** and Borsari, B. (2008) But I'm Too Young! A Case Study of Ovarian Cancer. *National Center for Case Study Teaching in Science Collection*. http://www.sciencecases.org/ovarian_cancer/prelude.asp (5,147)

Published Abstracts

21. **N.A. Rice**, J. Freeman, [§] L. Porter, [§] S. Wright, [§] N. Rowland (2015) Single nucleotide polymorphisms of the renin angiotensin system linked to high prevalence of essential hypertension in the Taita tribe of Kasigau, Kenya. *Annals of Global Health*, 81 (1): 101.
20. **Rice, N.A.**, Freeman, J.C[§] and Lengube, B.M. (2013) Allelic Variability in the AGT M235T and AT1 A1166C Single Nucleotide Polymorphisms from a Cohort of East Africans *FASEB J.* 27:1189.10.
19. Mefford, A.M.[§] and Rice, N.A (2009) Muscle Adaptation in Response to Voluntary Exercise in Phosphorylase Kinase Deficient Mice *FASEB J.* 23:506.10
18. Polireddy, K[§] and **Rice, N.A.** (2009) Searching for binding partners for the phosphorylase kinase variant PhK γ 181 *FASEB J.* 23:LB292
17. Sharma, B.V., Clouse, M.[§] and **Rice, N.A.** (2009) Evaluation of nitric oxide production in cultured pulmonary myofibroblasts. *FASEB J.* 23:LB294
16. **Rice, N.A.** (2008) The glycogenolysosome: A protein interaction network determined by students in an undergraduate hypothesis-driven cell biology laboratory course *FASEB J.* 22:658.5
15. Boulatnikov, I., Chavarria-Smith, J. [§], Carlson, G.M., and **Rice, N.A.** (2008) A Truncated Catalytic γ Subunit of Phosphorylase Kinase Is Present in Human Brain: Proteomics and Beyond *J. Biomol. Tech.* 19 (1).
14. Chavarria-Smith, J. [§] and **Rice, N.A.** (2008) A mutation in the coding region of Phka1 results in transcriptional repression of all phosphorylase kinase genes in the I/LnJ mouse *FASEB J.* 22:1050.6.
13. Hancock, J.M.[§] and **Rice, N.A.** (2006) Characterization of the Human PHKG2 Promoter. *FASEB J.* 20 (5):A957.
12. Elliott, N.E.[§] and **Rice, N.A.** (2006) Isolation of the promoter region of the PHKG1 gene. *FASEB J.* 20 (5): A957.
11. Rowland, N.S. and **Rice, N.A.** (2006) Nitric Oxide Suppresses Pulmonary Myofibroblast Proliferation and Actin Expression. *FASEB J.* 20 (4): A510.
10. Archila, S. [§], Carlson, G.M. and **Rice, N.A.** (2004) Identification of Phosphorylase Kinase α Subunit Binding Partners in Skeletal Muscle *FASEB J.* 8:C83.
9. **Rice, N.A.**, Robinson, A.S., Resnicow, D.L., Holton, L.E., Leinwand, L.A. (2002) Expression of the human IId and extraocular myosin S1 motors. *Prot. Sci* 11 (Suppl): 116.
8. **Rice, N.A.** and Leinwand, L.A. (2001) Pulmonary myofibroblasts express skeletal muscle proteins. *Mol. Bio. Cell* 12, 516a.
7. **Rice, N.A.** and Leinwand, L.A. (2001) Sarcomeric gene expression in pulmonary myofibroblasts. *LAMposium 2001- The LAM Foundation/ NHLBI Research Conference*, 306.
6. **Ayers[Rice], N.A.**, Hatch, B.A., Law, D.J. and Carlson, G.M. (2000) Phosphorylase kinase interacts with skeletal muscle proteins of both the thin and thick filament. *FASEB J.* 14 (8) A1491.
5. **Ayers[Rice], N.A.** and Carlson, G.M. (1999) Homodimeric interactions of the regulatory subunit of phosphorylase-b kinase. *FASEB J.* 13 (7) A1491.
4. **Ayers[Rice], N.A.**, Arciniegas, S.F. and Carlson, G.M. (1998) Subunit interactions of phosphorylase-b kinase evaluated by the two-hybrid system. *FASEB J.* 12 (8) A1440.
3. **Ayers[Rice], N.A.**, Nadeau, O.W., Read, M.W., Ray, P. and Carlson, G.M. (1997) Chemical crosslinking of phosphorylase-b kinase by the novel crosslinker, 4-phenyl-1,2,4-triazoline-3,5-dione. *FASEB J.* 11 (9), A1180.
2. **Ayers[Rice], N.A.**, Kapás, L. and Krueger, J.M. (1995) Circadian cycling of nitric oxide synthase(NOS) activity and cytosolic protein content in rat brain. *Soc. Neurosci. Abstr.* 21 (Part 2), 868.
1. **Ayers[Rice], N.A.**, Kapás, L. and Krueger, J.M. (1995) Brain nitric oxide synthase activity and sleep. *Sleep Res.* 24, 36.

CONFERENCE PRESENTATIONS

51. **N.A. Rice**, J. Freeman, [§] L. Porter, [§] S. Wright, [§] N. Rowland (2015) Single nucleotide polymorphisms of the renin angiotensin system linked to high prevalence of essential hypertension in the Taita tribe of Kasigau, Kenya. Consortium of Universities for Global Health conference, Boston, MA. [poster]
50. Porter, L.R., [§] Rowland, N.S. and **Rice, N.A.** (2014) Allelic Variability in the Angiotensin Converting Enzyme Polymorphism ACE I/D in an East African Population. National Conference for Undergraduate Research. Lexington, KY [talk]
49. Wright, S. [§] and Rice, N.A. (2014) Allelic Variability in the CYP11B2 C344T Single Nucleotide Polymorphism from a Cohort of East Africans. WKU Student Research Conference. [talk]
48. Porter, L.R., [§] Rowland, N.S. and **Rice, N.A.** (2014) Allelic Variability in the Angiotensin Converting Enzyme Polymorphism ACE I/D in an East African Population. WKU Student Research Conference [talk] **Received 2nd place in her division**
47. Dodson, A. [§]and **Rice, N.A.** (2013) Correlation of Environmental Risk Factors with the Prevalence of Essential Hypertension in Kasigau, Kenya. Kentucky Academy of Science annual meeting, Morehead, KY. [talk] **2nd place in the Health Sciences Undergraduate Competition**
46. Wright, S. [§] and Rice, N.A. (2013) Allelic Variability in the CYP11B2 C344T Single Nucleotide Polymorphism from a Cohort of East Africans. Kentucky Academy of Science annual meeting, Morehead, KY. [talk]
45. Williams, L.D. [§] and **Rice, N.A.** (2012) "Prevalence of Essential Hypertension in Kasigau, Kenya." WKU Student Research Conference, March 24, 2012.
44. Freeman, J.C. [§] and **Rice, N.A.** (2012) Single Nucleotide Polymorphisms linked to Essential Hypertension in Kasigau, Kenya. WKU Student Research Conference, March 24, 2012
43. Eastes, A, [§]Welch, E, [§] and **Rice, N.A.** (2012) "Nitric Oxide Synthase 3 Gene Regulation in Pulmonary Myofibroblasts" WKU Student Research Conference, March 24, 2012. [poster]
42. Eastes, A[§], Welch, E[§], and **Rice, N.A.** (2012) "Nitric Oxide Synthase 3 Gene Regulation in Pulmonary Myofibroblasts" National Conference for Undergraduate Research, Weber, UT. [poster]
41. **Rice, N.A.** and Stokes, M. (2012) Project based Study Abroad in Africa. WKU State-wide Study Abroad Symposium, Bowling Green, KY, March 31, 2012.
40. Freeman, J.C. [§] Lengube, B.M., Trawick, M.W. and **Rice, N.A.** (2012) Single Nucleotide Polymorphisms linked to Essential Hypertension in Kasigau, Kenya. Kentucky Academy of Science annual meeting, Richmond, KY. [talk]
39. Clouse, M.M., [§] Wright, S. [§] and **Rice, N.A.** (2012) Global DNA Methylation Patterns Are Not Correlated with Essential Hypertension in Rural Kenyans. Kentucky Academy of Science annual meeting, Richmond, KY. [talk]
38. Faughn, J. [§] and **Rice, N.A.** (2011) "Protein Kinase C Regulation of Pulmonary Myofibroblasts" South East Regional IDEA Meeting, New Orleans, LA , September 22-24, 2011.
37. **Rice, N.A.** (2011) "Assessment of Prenatal Care and Perinatal Outcomes in Kasigau, Kenya" AAFP International Family Medicine Workshop, San Diego, CA [invited presentation].
36. Faughn, J. [§] and **Rice, N.A.** (2010) NCRR 3rd Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE) Bethesda, MD, June 16 – 18, 2010 [poster]; **Chosen for Student Travel Award based upon abstract peer review and for the a highlighted poster session**
35. Mefford, A.M. [§] and **Rice, N.A.** (2009) "Muscle Adaptation in Response to Voluntary Exercise in Phosphorylase Kinase Deficient Mice", American Society of Biochemistry and Molecular Biology annual meeting, New Orleans, LA. [poster]
34. Polireddy, K[§]. and **Rice, N.A.** (2009) "Searching for binding partners for the phosphorylase kinase variant PhK γ 181", American Society of Biochemistry and Molecular Biology annual meeting, New Orleans, LA. [poster]
33. Sharma, B.V., Clouse, M. [§]. and **Rice, N.A.** (2009) "Evaluation of nitric oxide production in cultured pulmonary myofibroblasts." American Society of Biochemistry and Molecular Biology annual meeting, New Orleans, LA. [poster]
32. **Rice, N.A.** and Clouse, R. M (2009) "Stimulating Global Health Awareness in Early Career Premedical Undergraduates through an International Service Learning Experience in Kenya." AAFP International Family Medicine Workshop, Denver, CO [invited presentation].
31. Parsons, L.[§]. and **N.A. Rice** (2008) "Nitric oxide induced apoptosis of pulmonary myofibroblasts" WKU

- Student Research Conference [talk]
30. Mefford, A. M.[§] and **Rice, N.A. (2008)** "Muscle Adaptation in Response to Voluntary Exercise in Phosphorylase Kinase Deficient Mice" NIH, NCRR 2nd Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE) Washington, DC, August 6 - 8, 2008 [poster]
 29. Sharma, B.V. and **Rice, N.A. (2008)** "A reproducible method of measuring nitric oxide formation from myofibroblasts" NIH, NCRR 2nd Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE) Washington, DC [poster]
 28. **Rice, N.A.** and Clouse, R. M. (2007) "Partners in Caring: Developing an Undergraduate Medical Service-Learning Experience in Kenya" AAFP International Family Medicine Workshop, Tucson, AZ [invited poster].
 27. Chavarria-Smith, J.[§] and **N.A. Rice (2007)** "Identification and characterization of a novel phosphorylase kinase variant" Kentucky Academy of Science annual meeting, Louisville, KY. [talk] **1st place in the Molecular and Cellular Biology Undergraduate Competition**
 26. Mefford, A.[§] and **N.A. Rice (2007)** "Muscle Adaptation in Response to Voluntary Exercise" Kentucky Academy of Science annual meeting, Louisville, KY. [talk]
 25. Hancock, J.M. and Rice, N.A. (2006) "Characterization of the Human PHKG2 Promoter", *5th Annual Posters-at-the-Capitol*, Frankfort, KY.
 24. Chavarria-Smith, J.[§] and **N.A. Rice (2006)** "Phosphorylase Kinase Coordinated Gene Expression Using Deficient Mice" Sigma Xi Student Research Conference [talk]
 23. Dodson, M.[§] and **N.A. Rice (2006)** "Isolation of the Promoter Region of the PHKB Gene" Sigma Xi Student Research Conference [talk]
 22. Elliott, N.E.[§] and **Rice, N.A. (2006)** "Muscle Specific Transcriptional Regulation of the PHKG1 Gene" Sigma Xi Student Research Conference [talk]
 21. Winchester, J. S.[§] and **Rice, N.A. (2006)** "Tissue Expression Profiles of Phosphorylase Kinase Determined by Computational Analysis of Expressed Sequence Tags" Kentucky Academy of Science annual meeting, Morehead, KY. [talk]
 20. Chavarria-Smith, J.[§] and **N.A. Rice (2006)** "Phosphorylase kinase gene subunit expression developmental profile in PhK deficient mice compared to C57BL/6J mice" Kentucky Academy of Science annual meeting, Morehead, KY. [talk]
 19. Hancock, J.M.[§] and **Rice, N.A. (2006)** Characterization of the Human PHKG2 Promoter. American Society of Biochemistry and Molecular Biology annual meeting, San Francisco, CA. [poster]
 18. Elliott, N.E.[§] and **Rice, N.A. (2006)** Isolation of the promoter region of the PHKG1 gene. American Society of Biochemistry and Molecular Biology annual meeting, San Francisco, CA. [poster] **Honorable Mention in National Undergraduate Research Competition (Only 23 total awards were given out of 149 poster presentations)**
 17. Rowland, N.S. and **Rice, N.A. (2006)** Nitric Oxide Suppresses Pulmonary Myofibroblast Proliferation and Actin Expression. American Society of Biochemistry and Molecular Biology annual meeting, San Francisco, CA. [poster]
 16. Winchester, J.S.[§], Rouchka, E. C. and **N.A. Rice (2006)** "Tissue Expression Profiles of Phosphorylase Kinase Determined by Computational Analysis of Expressed Sequence Tags" UT-ORNL-KBRIN Bioinformatics Summit, Lake Barkley State Park, Cadiz, KY. [poster]
 15. Elliott, N.E.[§] and **Rice, N.A. (2005)** "Isolation of the promoter region of the PHKG1 gene." WKU Sigma Xi Student Research Conference [talk]
 14. Hancock, J.[§] and **Rice, N.A. (2005)** "Isolation of the human PHKG2 promoter." WKU Sigma Xi Student Research Conference [talk] - **Honorable Mention in the Biology and Chemistry Undergraduate Division**
 13. King, M.A.,[§] Shields, J.L. and **Rice, N.A. (2005)** "Phosphorylase kinase interacts with Cdc42 interacting protein 4 in skeletal muscle myotubes and myoblasts". WKU Sigma Xi Student Research Conference [talk]
 12. Sharp, R.[§] and **Rice, N.A. (2005)** "Nitric Oxide Synthase inhibition affects proliferation of pulmonary myofibroblasts." WKU Sigma Xi Student Research Conference [talk]
 11. Shehan, T.[§] and **Rice, N.A. (2005)** "Bioinformatic analysis of the putative promoters of human phosphorylase kinase." WKU Sigma Xi Student Research Conference [talk]
 10. Hancock, J.M.[§] and **N.A. Rice. (2005)** "Isolation of the Human PHKG2 Promoter." Kentucky Academy

- of Science annual meeting, Richmond, KY [talk]
9. Elliott, N.E[§] and **N.A. Rice** (2005) "Isolation of the Promoter Region of the PHKG1 gene" Kentucky Academy of Science annual meeting, Richmond, KY [talk] **2nd place in the Molecular and Cellular Biology Undergraduate Competition**
 8. **Rice, N.A** and N.S. Rowland (2005) "Nitric Oxide Suppresses Pulmonary Myofibroblast Proliferation and Actin Expression". Kentucky Academy of Science annual meeting, Richmond, KY. [talk]
 7. Johnson, H., **Rice, N.A.**, Davis, C.D. and R. Wyatt (2005) "Correlation Between a Biology Attitude Survey and Content Pre-assessment in an Introductory Course for Majors" Kentucky Academy of Science annual meeting, Richmond, KY. [talk]
 6. Archila, S.[§], Carlson, G.M., and **Rice, N.A.** (2004) "Identification of Phosphorylase Kinase Binding Partners in Skeletal Muscle". Sigma Xi Student Research Conference, Western Kentucky University [talk]
 5. Archila, S.[§], Carlson, G.M. and **Rice, N.A.** (2004) "Identification of Phosphorylase Kinase Binding Partners in Skeletal Muscle" Association of Biochemistry and Molecular Biology Annual Meeting, Boston, MA. [poster]
 4. King, M.A.[§], Archila, S., Sharp, R.A. and **Rice, N.A.** (2004) "Phosphorylase kinase interacts with thyroid receptor interacting protein 10 in skeletal myotubes. Kentucky Academy of Science annual meeting, Murray, KY [poster]
 3. Thacker, A.D.[§], Heltsley, J.R.[§] and **Rice, N.A.** (2004) "Quantification of nitric oxide synthase expression in pulmonary myofibroblasts. Kentucky Academy of Science annual meeting, Murray, KY. [poster]
 2. Handshoe, J.M.[§], Thacker, A.D.[§] and **Rice, N.A.** (2003) "The role of nitric oxide in isolated pulmonary myofibroblast differentiation. Kentucky Academy of Science annual meeting, Bowling Green, KY. [poster]
 1. Archila, S.[§], Carlson, G.M., and **Rice, N.A.** (2003) "Identification of Phosphorylase Kinase Binding Partners in Skeletal Muscle" Kentucky Academy of Science annual meeting, Bowling Green, KY [talk]

§ = student