

# ROBERT E. STEPHENS, PH.D.

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## MISSION STATEMENT

- ▶ Mentoring and initiating innovative research projects that will make an original contribution to knowledge in the field
- ▶ Producing high-impact peer-reviewed articles that has enhanced the international research reputation of KCUMB.
- ▶ Pursuing clinically relevant investigations on the neurology and neuroscience of cough in humans
- ▶ Providing a challenging and innovative educational experience in clinical head and neck anatomy and neuroanatomy.

### Education Mastery:

- ▶ Dedicated to creating a legacy of learning that provides the knowledge and motivation to challenge students, residents, and fellows to seek and achieve excellence in neurology and research. Foster engagement and interaction among medical and graduate students and physicians.
- ▶ Created lectures and conducted clinical anatomy and neuroanatomy labs that explore new approaches to ENT, skull-base surgery, neurosurgery and neurology. Dissect head and neck anatomy with the brain *in situ* in real-time in a state-of-the-art dissection amphitheater. Strong contribution to helping KCUMB students score consistently above the national mean in anatomy on National Medical Boards.

### Academic Experience:

- ▶ Experienced Full Professor with 31 years of achievement teaching case-based clinical neuroanatomy and clinically oriented head and neck anatomy. Numerous teaching awards from several classes and student organizations. Served 19 years as Chair of the Department of Anatomy.
- ▶ Directed a successful clinically oriented anatomy department
- ▶ Founded a Clinical Anatomy Fellowship Training Program (CAFTP) in 2004 that will evolve into a graduate program in Clinical Anatomy.
- ▶ Generated a positive revenue stream through its training programs for physicians.
- ▶ Emphasized a strategic focus on academic and scholarly achievement.

### Core Competencies

Expertise in the neurology of airway protection and the neurophysiology of the control of abdomino-pelvic sphincters during cough

### Teaching Mastery

Supervision and development of clinical anatomy department and Clinical Anatomy Fellowship Training Program with outstanding outcome measures on National Board exams and research publications and presentations

## HIGHLIGHTS OF PROFESSIONAL QUALIFICATIONS

- ▶ **Research:** Investigating the neuroanatomical, electrophysiological, and clinical implications of the laryngeal expiratory reflex (LER) and its unique role in humans since 1992. Studies on the peripheral and central connections of the LER versus voluntary cough and its role in neurological protection of the upper airway

during swallowing in inhalation, and its effect on abdominal and pelvic sphincters have led to publications in peer-reviewed journals and has significant clinical implications in neurology, pulmonology, urology and gastrointestinal medicine.

- ▶ **Surgical Training Programs:** Produced significant revenue for KCUMB's clinical anatomy programs through the Center for Anatomical Research and Education (CARE), offering continuing medical education and surgical training programs to medical device companies and physicians.
- ▶ **Pre-graduate Fellowship Program Development:** Initiated pre-graduate Fellowship program in clinical anatomy and trained third- and fourth-year medical students in a multidisciplinary, 11-month program. Program includes coursework in research protocol and design, biostatistics, clinical anatomy advanced seminars, and journal and research seminars.
- ▶ **Center for Anatomical Research and Education:** Launched execution of KCUMB's Conte Anatomy Lab, a state-of-the-art dissection amphitheater with remote-controlled high-definition television cameras and 19 monitors and specialty scopes to broadcast via a TV production facility. Implemented the use of fresh cadavers for clinical training and research, surgical dissection, and endoscopic training and techniques.
- ▶ **Leadership Skills:** Excelled at strategic and logistical planning with an outcome-based management style and consensus-driven problem solving approach. Repeatedly recognized as an effective student advisor and leader.

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## EDUCATION

### DOCTOR OF PHILOSOPHY IN ANATOMY

University of Kansas, Kansas City, KS

### BACHELOR OF SCIENCE IN BIOLOGY

Washburn University, Topeka, KS

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## PROFESSIONAL AFFILIATIONS

AMERICAN ACADEMY OF NEUROLOGY

SIGMA XI, SCIENTIFIC RESEARCH SOCIETY | AMERICAN ASSOCIATION OF ANATOMISTS

AMERICAN ASSOCIATION FOR CLINICAL ANATOMISTS

ASSOCIATION OF ANATOMY, CELL BIOLOGY, AND NEUROBIOLOGY CHAIRS

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## PROFESSIONAL EXPERIENCE

**KANSAS CITY UNIVERSITY OF MEDICINE & BIOSCIENCES**, Kansas City, MO [1981-Present]

**Professor of Anatomy** [1991-Present]

**Associate Professor of Anatomy** [1987-1991]

**Assistant Professor of Anatomy** [1981-1987]

**UNIVERSITY OF KANSAS**, Kansas City KS

**Instructor of Neuroanatomy – University of Kansas** [1980-1981]

**Graduate Student Lecturer** to first year KUMC medical students in Neuroanatomy [1976-1979]

## ADMINISTRATIVE APPOINTMENTS

### ASSOCIATE DEAN OF BIOMEDICAL SCIENCES [2004-Present]

Promoted the development and accreditation with the NCA of the Higher Learning Commission of the graduate program in biomedical sciences and coordinated curriculum development, graduate student mentoring, and logistical planning. Staged the clinical anatomy fellowship program to become the first discipline for 2013 graduate accreditation.

### CHAIR OF ANATOMY [1992-Present]

Leading the development of a research-based graduate program in clinical anatomy for third- and fourth-year medical students, who need a teaching/research portfolio for future residency and academic appointments. Program includes requirements to submit original research to peer-reviewed journals and present the work at a appropriate professional meeting.

## PEER-REVIEWED RESEARCH PUBLICATIONS

"Inspiration Closure Reflex: The Effect of Respiration on Intrinsic Sphincters," Addington WR, Stephens RE, Miller SP, Ockey RR: **Muscle Nerve** 2012, (Accepted: 9/12/12).

"Voluntary and Reflex Cough and the Expiration Reflex: Implications for Aspiration after Stroke," Widdicombe JG, Addington WR, Fontana GA, Stephens RE, **Pulm Pharmacol Ther**, 2011.

"Acousticofacial-Glossopharyngeal Triangle: An Anatomic Model for Rapid Surgical Orientation," Surek CC, Van Ess M, Stephens RE, **Skull Base** 2010, 20:139-142.

"Anatomic Changes related to Laryngeal Descent from Birth to 1 Year of Age: Do They Play a Role in SIDS?" Stephens RE, Bancroft A, Glaros AG, Lowe LH, **Ear, Nose & Throat Journal**, 2010, 89: 313-317.

"Acousticofacial-Glossopharyngeal Triangle: An Anatomic Model for Rapid Surgical Orientation" (Published Abstract and Platform Presentation), Edited by Spetzler R, Thieme, **Skull Base: 20<sup>th</sup> Annual Meeting North American Skull Base Society**: New Orleans, October 2009.

"Intra-Abdominal Pressures during Voluntary and Reflex Cough," Addington WR, Stephens RE, Phelipa MM, Widdicombe JG, Ockey RR, **Cough**, 2008, 4:2.

"Course Variability of the Phrenic Nerve in the Presence of an Azygos Lobe: Two Case Reports," Bancroft A, Stephens RE, **Clinical Anatomy**, 2007, 20:982-083.

"Neurological Effects of Cough on Intra-Abdominal Pressure" (Abstract), Addington WR, Stephens RE, Miller SP, Briganti MW, Anderson JW, Ockey RR, **Fourth International Symposium on Cough**, The National Heart & Lung Institute, Imperial College, London, 2006.

"Effect of Voluntary and Involuntary Cough on Stress Urinary Incontinence" (Abstract), Addington WR, Stephens RE, Ockey RR, Phelipa MMD, Reilley S, **Fourth Symposium on Cough**, Imperial College, London, 2006.

"Effect of Stroke Location on the Laryngeal Cough Reflex and Pneumonia Risk," Addington WR, Stephens RE, Widdicombe JG, Rekab K, **Cough**, 2005, 1:4.

"Anatomical Measurements of the Laryngeal Cough Expiratory Reflex Confirming Latencies in Humans" (Abstract), **Second International Cough Symposium**, Imperial College, London, 2004.

"Videofluoroscopy of the Diaphragm during Voluntary and Reflex Cough in Humans," Stephens RE, Addington WR, Miller SP, Anderson JW, **American Journal of Physical Medical Rehabilitation**, 2003, 82:384.

"Effect of Acute Unilateral Middle Cerebral Artery Infarcts on Voluntary Cough and the Laryngeal Cough Reflex," Stephens RE, Addington WR, Widdicombe JG, **American Journal of Physical Medical Rehabilitation**, 2003, 82:379-383.

"Electrophysiological Latency to the External Obliques of the Laryngeal Cough Expiration Reflex in Humans," Addington WR, Stephens RE, Widdicombe JG, Ockey RR, Anderson JW, Miller SP, **American Journal of Physical Medical Rehabilitation**, 2003, 82:370-373.

"Assessing the Laryngeal Cough Reflex and the Risk of Developing Pneumonia after Stroke," Addington WR, Stephens RE, Gilliland KA, Rodriguez M, Mosby: St. Louis, 2001.

"Assessing the Laryngeal Cough Reflex and the Risk of Developing Pneumonia after Stroke," Addington WR, Stephens RE, Gilliland KA, Rodriguez M, **Arch Physical Medical Rehabilitation**, 1999, 80:150-154.

"Effect of Tartaric Acid-Induced Cough on Pulmonary Function in Normal and Asthmatic Humans," Addington, WR, Stephens RE, Widdicombe JG, Anderson JW, Rekab K, **American Journal of Physical Medical Rehabilitation**, 2003, 82:374-378.

"Assessing the Laryngeal Cough Reflex and the Risk of Developing Pneumonia after Stroke: An Interhospital Comparison," Addington WR, Stephens RE, Gilliland KA, **Stroke**, 1999, 30:1203-1207.

"Anesthesia of the Superior Laryngeal Nerves and Tartaric Acid-Induced Cough," Addington WR, Stephens RE, Goulding RE, **Arch Physical Medical Rehabilitation**, 1999, 80:1584-1586.

"A New Paradigm for Assessing Aspiration Pneumonia after Stroke" (Abstract), Gilliland KA, Stephens, RE, Addington WR, **Journal of Stroke Cerebrovascular Disability**, 1999, 8:279.

"Anatomy of the Internal Branch of the Superior Laryngeal Nerve," Stephens RE, Wendel KH, Addington WR, **Clinical Anatomy**, 1999, 12: 79-83.

"Tartaric Acid-Induced Cough and the Superior Laryngeal Nerve Evoked Potential," Addington WR, Stephens RE, Gilliland KA, Miller SP, **American Journal Physical Medical Rehabilitation**, 1998, 77:523-526.

"A New Aspiration Screening Test to Assess the Need for Modified Barium Swallow Study" (Abstract), Addington, WR, Stephens RE, Ockey RR, Kann D, Rodriguez M, **Arch Physical Medical Rehabilitation**, 1995, 76:1040.

"Glasgow Score, FIMS, and Muscle Tone as Predictors of Functional Outcome" (Abstract), Addington WR, Stephens RE, Varghese G, **Arch Physical Medical Rehabilitation**, 1992.

## SELECTED INTERNATIONAL AND NATIONAL PRESENTATIONS

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| 2011 | Invited Speaker, American Cough Conference, NY.  |
| 2011 | "Neurophysiology of Airway Protection and Intrinsic Sphincter Deficiency," 2-Hour Platform Presentation, Voice and Swallow Conference, Florida Medical Association and NOVA University, Jupiter Beach, FL.                                       |
| 2009 | "Neurology of the Laryngeal Expiratory Reflex," American Cough Conference, Jersey City, NJ.  |
| 2010 | Two Posters and Oral Presentations, International Cough Symposium, Imperial College, London.   |
| 2009 | "Quantitative Analysis of Neurological Airway Protection in Normal and Neurological Subjects: an FDA Clinical Trial," 2 Platform Presentation, Voice and Swallow Conference, Florida Medical Association and NOVA University, Jupiter Beach, FL. |
| 2008 | "Anatomical and Physiological Aspects of the Laryngeal Cough Reflex," 2-Hour Platform, American Osteopathic Annual Meeting, Las Vegas, NV.   |
| 2008 | Two Posters and Oral Presentation, International Cough Symposium, Imperial College, London.  |
| 2007 | "The Laryngeal Expiratory Reflex and its Clinical Implications," American Cough Conference, Jersey City, NJ.   |
| 2006 | Two Posters and Oral Presentation, International Cough Symposium, Imperial College, London.  |
| 2004 | Two Posters and Oral Presentation, International Cough Symposium, Imperial College, London.  |
| 2003 | Cough Symposium, Bologna, Italy  |
| 2000 | "The Neurology of the Laryngeal Cough Reflex: Assessing the Laryngeal Cough Reflex and Pneumonia Risk," 2 Platform Presentations, Dysphagia, Florida Medical Association and NOVA University, Palm Beach, FL, March 24-25, 2000.                 |
| 1999 | "Voluntary Cough Dysfunction with Acute Unilateral Cerebral Hemispheric Infarcts" Poster, American Academy of Physical Medicine and Rehabilitation Sixty-First Annual Meeting in conjunction with the  |

Thirteenth World Congress of the International Federation of Physical Medicine and Rehabilitation, Washington, DC, November 13, 1999.

- 1999 "A New Paradigm for Assessing the Laryngeal Cough Reflex and Pneumonia Risk After Stroke" Poster, North American Stroke Association Annual Meeting, Snowmass CO, September 1999.
- 1998 "Prevention of Aspiration Pneumonia in Stroke Patients" Poster, Harvard University Symposium on Brain Injury and Stroke, Braintree Hospital, Cambridge, MA, November 1998.
- 1998 "Assessing the Laryngeal Cough Reflex and Prevention of Aspiration Pneumonia in Stroke Patients" Poster, North American Stroke Association Annual Meeting, Cancun, Mexico, November 1998.
- 1997 "The Laryngeal Evoked Potential and Laryngeal Reflex" Platform Presentation, Forty-Fourth Annual Scientific Meeting of the American Association of Electrodiagnostic Medicine, San Diego, CA, September 20, 1997.
- 1997 "The Cough Reflex and the Assessment of Aspiration Pneumonia Risk" Platform Presentation, American Speech, Language and Hearing Association, Boston MA, November 1997.

## TEACHING EXPERIENCE

### NEUROSCIENCE SECTION [2000-Present]

Teach 10-week neuroscience course for 250 medical students that integrates neuroanatomy, neurophysiology, neuropharmacology, neurology, neurosurgery, neuropathology, otorhinolaryngology, ophthalmology, and infectious diseases. One class section includes 107 hours of lectures and labs in clinical anatomy of the head and neck and clinical neuroanatomy and case-based presentations on the neuroanatomical basis of the neurological examination. An integrated, multi-media approach to clinical neuroanatomy and head and neck anatomy in a case-based Neuroscience Section.

### CLINICAL NEUROANATOMY [1981-2000]

Taught an annual 9-week, clinically based course focusing on the neuroanatomical basis of neurological examination employing 70 individual cases and final exam group case presentations. Course encompassed 27 lectures, 9 clinical conferences, and 3 topography labs.

### CLINICAL ANATOMY OF THE HEAD & NECK [1981-2000]

Facilitated an annual, 5-week, clinically oriented course on the anatomy of the head / neck. Course included 22 lecture and 60 lab hours, as well as cadaveric dissection and didactic / laboratory presentations of clinical applications.

### ANATOMY FELLOWSHIP PROGRAM [2004-Present]

Improved the anatomy department's clinical focus, fostering classroom / lab teaching excellence and a research emphasis. Department includes 6 full-time and 3 Fellows who teach Gross Anatomy with partial involvement in histology, embryology, or neuroanatomy. Supervise the training and research projects of 3 medical students pursuing an 11-month pre-graduate fellowship program in clinical anatomy. Collaborate with select fellows on research projects and mentor students on writing and submitting their original research to peer-reviewed journals.

## CAREER HONORS & AWARDS

### THE NOTOCHORD AWARD FOR EXCELLANCE IN NEUROSCIENCE EDUCATION

American Academy of Neurology Student Interest Group, 2012

### ADVOCATE FOR ACADEMIC EXCELLENCE

PSI SIGMA ALPHA, 2012

Kansas City University of Medicine and Biosciences

### ADVOCATE FOR EXCELLENCE AWARD

PHI SIGMA ALPHA, 2005

Kansas City University of Medicine and Biosciences

### AWARD FOR EXCELLENCE IN NEUROLOGIC EDUCATION

American Academy of Neurology, 2004

**STUDENTS' CHOICE AWARD IN NEUROSCIENCE**

Kansas City University of Medicine and Biosciences, 2003

**MISSOURI GOVERNOR'S AWARD FOR EXCELLENCE IN EDUCATION, 2002****DISTINGUISHED PROFESSOR AWARD**

Kansas City University of Medicine and Biosciences, 1990

**DISTINGUISHED PROFESSOR AWARD**

Kansas City University of Medicine and Biosciences, 1987

**DISSERTATION HONORS**

University of Kansas, 1980

**DEPARTMENTAL HONORS IN BIOLOGY**

Washburn University, 1974

**COMMUNITY & UNIVERSITY SERVICE****Board of Visitors, UNIVERSITY OF NORTH TEXAS HEALTH SCIENCE CENTER AT FORTH WORTH [2008-Present]****Board of Trustees Member, PLATTE COUNTY HEALTH DEPARTMENT [1995-Present]**

- ▶ Elected Chairman of the Board of Trustees of the Platte County Health Department with a 15-year Board tenure. Led a 5-year strategic plan and reorganization that has steered the rollout of a novel patient-centered, physician-based clinical service for under- and uninsured residents. Cited as one of the best health departments in the US.

**Director, CLINICAL ANATOMY PRE-GRADUATE FELLOWSHIP PROGRAM [2004-Present]**

- ▶ Restructured recruitment, expanding the training program for the clinical anatomy Fellows as part of a long-term initiative to develop a graduate program in 2013.

**Faculty Advisor, KCUMB Student Organizations:**

- ▶ American Academy of Neurology Student Interest Group | ENT Student Interest Group | Physical Medicine Student Organization | Sports Medicine Organization [1985-Present] | Medical Classes [1998, 1999, 2001]

**UNIVERSITY SERVICE:**

- ▶ Appeals Board (2002-Present) | Quality Enhancement Council (COCA & HLC Accreditation) | Promotion & Graduation Committee, Chair [1990-2000] | Institutional Review Board, Vice Chair | Steering Committee | Admissions Committee

**PROFESSIONAL DEVELOPMENT**

- ▶ Traumatic Brain Injury, Barrow Neurological Institute Symposia, 2012
- ▶ Clinical rounds with physicians from Kansas City Neurological Associates, 2011, 2012
- ▶ Annual Barrow Neurological Institute Neurosurgery Symposia, 2010, 2011
- ▶ Stroke, Epilepsy, and Spinal Cord Injury, Barrow Neurological Institute Symposia, 2010-11
- ▶ Clinical rounds with Dr. Robert Addington (PM&R) at Health South Sea Pines Hospital in Melbourne, FL [1999-Present]
- ▶ American Academy of Neurology, 2004