

# Curriculum Vitae

Name: Avinash B. Kumar  
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## Training

|             |   |
|-------------|---|
| 1996        | M.B.B.S. from University of Mysore, India   |
| 1996 - 1997 | Certificate from KrishnaRajendra and Allied Hospitals, Mysore, India                              |
| 2000 - 2004 | Certificate from University of South Florida, Tampa, FL   |
| 2004 - 2005 | Certificate in Critical Care Medicine from University of Iowa Hospitals and Clinic, Iowa City, IA |

## Licensure and Certification

|                   |   |
|-------------------|---|
| 1999 - Present    | Certification, ECFMG Certification  |
| 2005 - 2007       | Certification, Instructor, Advanced Trauma Life Support   |
| 2006 - 2006       | Board Certification, Hyperbaric Medicine  |
| 2006 - 2016       | Board Certification, Anesthesiology   |
| 2006 - 2016       | Board Certification, Critical Care Medicine   |
| 2007 - 2010       | Certificate, Teaching Scholar Program (University of Iowa)  |
| 2008 - 2008       | Board Certification, National Board of Nutrition Support  |
| 2008 - 2008       | Board Certification, Neuro Critical Care  |
| 2009 - 2015       | Medical License, Iowa Medical License of Iowa (35641)   |
| 2011 - 2013       | Certificate, ACLS   |
| 2012 - 2015       | Medical License, Tennessee Medical License of Tennessee (48588)   |
| 04/2014 - 04/2026 | ReCertification, Anesthesiology Boards- Recertification United States (ReCertification)                                       |
| 06/2014 - 06/2016 | BLS, BLS certification of Tennessee United States   |
| 09/2014 - Present | Echocardiography (Basic), Special Competence in Basic Perioperative transesophageal echocardiography United States (00019569) |

## Academic Appointments

|                   |   |
|-------------------|---|
| 2005 - 2011       | Director of Medical Student Clerkship, Surgical Intensive Care Unit, University of Iowa Hospitals and Clinics (Iowa City, Iowa)       |
| 2005 - 2001       | Assistant Director of Medical Student Clerkship, Department of Anesthesia, University of Iowa Hospitals and Clinics (Iowa City, Iowa) |
| 2005 - 2010       | Assistant Professor, Department of Anesthesia, University of Iowa Hospitals and Clinics (Iowa City, Iowa)                             |
| 2010 - 2012       | Associate Professor, Department of Anesthesia, University of Iowa Hospitals and Clinics (Iowa City, Iowa)                             |
| 08/2012 - Present | Associate Professor of Anesthesiology, Vanderbilt University (Nashville, Tennessee)   |
| 01/2014 - Present | Associate Professor in Neurology, Vanderbilt University (Nashville, Tennessee)  |

## Other Work Experience

|             |  |
|-------------|--|
| 2010 - 2012 | Neuro Critical Care Faculty Team Leader for Surgical ICU Bay 3, University of Iowa Hospitals and Clinics (Iowa City, Iowa) |
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|                   |   |
|-------------------|---|
| 2010 - 2012       | Physician Leader of the Surgical ICU Infection Control Team, University of Iowa Hospitals and Clinics (Iowa City, Iowa)           |
| 09/2012 - Present | Associate Director, Critical Care Medicine Fellowship, Anesthesia and Critical Care, Vanderbilt University (Nashville, Tennessee) |
| 10/2013 - Present | Medical Director Neurosciences Intensive Care Unit, Anesthesiology, Vanderbilt University (Nashville, Tennessee)                  |

## Professional Organizations

|             |   |
|-------------|---|
|             | American Society of Anesthesiology, Member  |
|             | International Anesthesia Research Society, Member   |
|             | American Thoracic Society, Member   |
|             | European Society of Anesthesia, Member  |
|             | Society for Education in Anesthesia, Member   |
| 2005 - 2014 | Society of Critical Care Medicine, Member   |
| 2010 - 2013 | Society of Critical Care Medicine, Committee member: Anesthesiology Section of SCCM                 |
| 2012        | Neurocritical care society (NCS)  |
| 2014        | Association of University Anesthesiologists   |
| 2014 - 2017 | Society of Critical Care Medicine, Committee Member: Adult Current Concepts in Critical Care Course |

## Professional Activities

### Intramural

|                   |   |
|-------------------|---|
| 2007 - 2007       | Committee for Review of Incentive Pay, Anesthesiology, Committee for the revision of incentive pay, Member  |
| 2008 - 2008       | Root Cause Analysis Committee, University of Iowa Hospital and Clinics, The committee developed processes to identify high-risk patients and to develop care processes to limit risk, Member  |
| 2008 - 2008       | Goal Directed Organ Donor Support, Anesthesiology, Helped developed a consensus management algorithm for managing donor patients in the SICU. Developed and implemented Epic order sets for donor patient management, Development of Guidelines     |
| 2008 - 2012       | Central Venous Access Review Committee, University of Iowa Hospitals and Clinics, Hospital-wide committee to review equipment and practices to be adopted hospital-wide and to standardized the equipment available, Represented SICU               |
| 2010 - 2010       | Root Cause Analysis Committee, University of Iowa Hospitals and Clinics, The committee made recommendations to standardize the electronic order sets for Vancomycin administration and monitor drug levels in the ICU, Member                       |
| 2011 - 2012       | Epic (EMR) Procedure Note Writer Committee, University of Iowa Hospitals and Clinics, Work group to streamline and standardized documentation for various ICU based procedures, such as central line placements, bronchoscopies, etc.               |
| 10/2012 - Present | Institutional Critical Care Committee, Anesthesiology, Member   |
| 10/2012 - Present | Fellowship Education Committee, Anesthesiology, Fellowship Education committee: Reviews applicants, interviews, quarterly reviews and addresses issues with fellows in Critical Care, Member, Educational review and Fellowship candidate selection |
| 09/2013 - Present | Comprehensive NeuroCritical Care Committee, Anesthesiology, Monthly multidisciplinary meeting between Neurosurgery, Neurology, Nursing, Pharmacy to discuss and improve patient care in Neuroscience ICU, Chair                                     |
| 09/2013 - Present | Clinical Competency Committee, Anesthesiology, Meet every quarter to determine if the critical care fellows are progressing in their fellowship path., Member   |
| 10/2013 - Present | Medical ICU Directors Forum, Anesthesiology, Neuro ICU Medical Director   |

### Extramural

|                |  |
|----------------|--|
| 2007 - Present | Reviewer for Anesthesiology  |
| 2010 - Present | SCCM -Anesthesiology Steering Committee, Society of Critical Care Medicine, Member |
| 2010 - Present | Reviewer for European Journal of Anesthesiology                                    |
| 2010 - Present | Reviewer for NeuroCritical Care  |

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|-------------------|--|
| 2010 - Present    | Reviewer for Minerva Anesthesiologica  |
| 2012 - Present    | Annual Congress - Society of Critical Care Medicine (Abstract Reviewer)  |
| 2013 - 2013       | Reviewer for Anesthesia and Analgesia  |
| 01/2014 - 01/2017 | Current Concepts in Adult Critical Care, Society of Critical Care Medicine, Member, Contributor to the annual course |
| 07/2014 - Present | Reviewer for Canadian Journal of Neurological Sciences   |

## Teaching Activities

|                |  |
|----------------|--|
| 10/4 - 10/4    | Critical Care Skills week: Burns and Trauma Resuscitation, Instructor, CELA, Sessions times 2 for a total of 240 mins  |
| 02/13 - 02/13  | Fast track abdominal Surgery, Burn ICU   |
| 2004 - 2004    | Heparin Induced Thrombocytopenia   |
| 2005 - 2005    | Human Simulator Based Scenarios: Sepsis: Recognition and Management, Instructor  |
| 2005 - 2005    | Delirium in the ICU  |
| 2005 - 2005    | FCCS Instructor Course: Fundamentals of Critical Care Support, Instructor, Taught "Acute Coronary Syndrome" and "Central Venous Access" skill stations.  |
| 2005 - 2005    | Oxygen Transport and Hemoglobin Substitutes  |
| 2005 - 2005    | ATLS, Instructor, "Airway Problems in the ICU" and "Spine Assessment" skill stations.  |
| 2005 - 2005    | 2005 Iowa Airway Symposium: Airway Problems in the ICU and Remote Anesthesia Locations   |
| 2005 - 2012    | Mock orals for residents two times each year   |
| 2006 - 2006    | Human Simulator Based Scenarios: Recurrent Laryngeal Nerve Palsy in the PACU   |
| 2006 - 2006    | Human Simulator Based Scenarios: Acute Perioperative Myocardial Ischemia   |
| 2006 - 2006    | Hemoglobin Substitutes   |
| 2006 - 2006    | Pulmonary Artery Catheter: The Basics  |
| 2006 - 2012    | ICON: Fall Intensive Care Course Module, Designed and taught module designed for the Medical Student Clerkship for the University of Iowa Hospitals and Clinics SICU. It contained the essential webcasts, orientation materials, pre and post tests and evaluations for the medical students. |
| 2007 - 2007    | Human Simulator Based Scenarios: Acute Increase in Intracranial Pressure in the Recovery Room  |
| 2007 - 2007    | Human Simulator Based Scenarios: Thyroid Storm: Recognition and Management   |
| 2007 - 2007    | Morning Conference: Septic Shock in the Operating Room   |
| 2007 - 2007    | Morning Conference: Intraop Blood Pressure Management  |
| 2007 - 2007    | Bleeding Patient in the ICU: Diagnostic and Therapeutic Approach   |
| 2007 - 2007    | Contrast Induced Nephropathy   |
| 2007 - 2007    | 2007 Iowa Airway Symposium, "Approach to the Surgical Airway-Cannot Intubate, Cannot Ventilate" Scenarios  |
| 2008 - Present | Morning Conference: Vasoactive Drugs in Anesthesia Practice Part I   |
| 2008 - Present | Morning Conference: Vasoactive Drugs in Anesthesia Practice Part II  |
| 2008 - 2008    | Morning Conference: Postpartum Mental Status Changes with HELLP Syndrome   |
| 2008 - 2008    | Management of a Bleeding Patient in the ICU  |
| 2008 - 2008    | Management of Severe Infections: Fundamentals of Critical Care Support   |
| 2008 - 2008    | Approach to a Hypotensive Patient in the ICU   |
| 2008 - 2008    | Airway Management Short Seminar Series, Fiber Optic Bronchoscopy: The Basics" and Skill Station with variations of Laryngeal Mask Airways. Sessions I and II.  |
| 2008 - 2008    | Fundamentals of Critical Care Support, "Management of Severe Infections" and "Non Invasive Ventilatory Support" skill stations   |
| 2009 - 2009    | Human Simulator Based Scenarios: Interoperative Myocardial Ischemia: Recognition and Management  |
| 2009 - 2009    | Human Simulator Based Scenarios: Autonomic Dysreflexia in a Spinal Cord Injury Patient   |
| 2009 - 2009    | Morning Conference: Perioperative Physiological Changes in Pheochromocytoma  |
| 2009 - 2009    | Introduction to Airway Management for Medical Students   |
| 2009 - 2009    | Morning Conference: PBLD on Management of Pheochromocytoma   |
| 2009 - 2010    | Introduction to Airway Management, Instructor, Hands on workshop conducted 3 times per year for 2 years.   |

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|-------------------|---|
| 2009 - 2010       | Fundamentals of Critical Care Support, Co-Director, Taught Recognition and Management of Shock  |
| 2009 - 2011       | Morning Conference: Vasoactive Medications Part 1   |
| 2009 - 2011       | Morning Conference: Vasoactive Medications Part II  |
| 07/2009 - 06/2010 | Airway Skills Workshop: Fiberoptic Intubations Through Supralaryngeal Devices, Iowa Hospitals and Clinics   |
| 2010 - 2010       | Morning Conference: Brain Death: Navigating the Pitfalls  |
| 2010 - 2010       | Morning Conference: HELLP Syndrome  |
| 2010 - 2010       | Hemoglobin Substitutes-Where Are We Now?  |
| 2010 - 2010       | Acute Kidney Injury Following Cardiopulmonary Bypass and Its Outcome  |
| 2010 - 2010       | Acute Kidney Injury in the ICU  |
| 2010 - 2010       | Introduction to Airway Management for Medical Students  |
| 07/2010 - 06/2011 | Airway Skills, Iowa Skills Workshop   |
| 2011 - 2011       | Acute Kidney Injury in the ICU-Role of Biomarkers   |
| 2011 - 2011       | Morning Conference: PBLD: Managing a Septic Patient in the OR   |
| 2012 - 2012       | Endpoints of Resuscitation-Why We Are Not There Yet   |
| 10/2012 - Present | Electrolyte imbalances in the ICU, MCE  |
| 10/2012 - Present | Challenges in Mechanical Ventilation:alternate strategies, NCU  |
| 11/2012 - 11/2012 | FCCS: Neurocritical Care, FCCS instructor   |
| 2013 - 2013       | Critical Care Immersion: PA catheters and Waveform interpretation, CELA, Critical Care Immersion Course- PA catheters and Waveform interpretation                     |
| 02/2013 - 2013    | FCCS: Neuro Critical Care, Instructor, Light Hall (4th floor), 30 mins  |
| 05/2013 - 05/2013 | Ventilator Weaning Protocols: beyond just pressure support trials, NCU, ICU lecture series in NCU (60 mins)   |
| 07/2013 - 10/2013 | Is there anything better than serum creatinine, Instructor, NCU, 60mins   |
| 08/2013 - 08/2013 | ICU Fellowship Lecture series: Update on Mechanical ventilation- Echo, Diaphragm, and automated weaning ( 60 mins)  |
| 09/2013 - Present | Analgesics, Sedation- Sequelae ( 120 mins), Anesthesia resident library   |
| 10/2013 - 3013    | Analgesics, Sedation and Sequelae ( 120 mins), Instructor   |
| 12/2013 - 10/2013 | Acute Kidney injury in the ICU- role of biomarkers, 60 mins   |
| 02/2014 - 2014    | Journal Club discussion ( 60 mins), Instructor, CELA  |
| 02/2014 - 02/2014 | Hemodynamic Monitoring ( 60 mins), Instructor, CELA   |
| 04/2014 - 2014    | Critical Care Immersion: Evaluating clinical presentations: Neuroscience cases (60 mins), (60 mins), CELA, Critical Care Immersion course                             |
| 04/2014 - 2014    | Critical Care Skills week: ARDS: When you cannot ventilate and oxygenate intubated patients (60 mins), Instructor, CELA   |
| 04/2014 - 2014    | Journal Club: Low tidal volume ventilation in ARDS, CELA  |
| 07/2014 - 07/2014 | Orientation to the Neuro ICU  |
| 07/2014 - 07/2014 | Orientation to didactics and digital presence for the CC fellowship   |
| 08/2014 - 2014    | SAH: the aneurysm is fixed, are we out of danger now ( 60 mins), Instructor, NCU conference room  |
| 08/2014 - 10/2014 | Weaning protocols- beyond just weaning to pressure support ( 60 mins), Instructor, 60mins   |
| 08/2014 - 10/2014 | Perioperative complications after Neurological Surgery (60 mins), Instructor, NCU conference room, 60mins   |
| 10/2014 - 2014    | Critical Care Immersion(2014-15): Case Based Learning - SAH and complications, Instructor (120 mins), LH 379, 120 mins  |
| 10/2014 - 2014    | Critical Care Immersion ( 2014-15): Hemorrhage, Resuscitations and Vasopressors, Instructor (60 mins), LH479, 60 mins   |
| 10/2014 - 10/2014 | Critical Care Immersion (2014-15): Journal Club discussion, Instructor (60 mins), LH 379, 60 mins   |
| 10/2014 - 10/2014 | Neuro ICU lecture series: Perioperative Complications after Neurological Surgery, Instructor (60 mins), Neuro ICU, 60 mins  |
| 10/2014 - 10/2014 | Combined Multidisciplinary Critical Care Lecture Series: Understanding the Obesity Paradox and preoperative outcomes, Instructor (60 mins), 9T3- SICU conference room |

## Research Supervision / Mentorship

|                   |  |
|-------------------|--|
| 2005 - 2006       | Khurram Khan, MD Current Position: Attending Physician in Cardiac Anesthesiology. (Resident, General Mentorship)   |
| 2008 - 2008       | Riley Stringham, MD Current Position: Attending Physician in Pain Medicine (mentee for the Midwest Anesthesia Resident Conference presentations). (Resident, Research)                                   |
| 2009 - 2009       | Sudarshan Setty, MD Montefiore Medical Center, NY, Current Position: Chief Resident in Anesthesia (mentee for the Midwest Anesthesia Resident Conference presentations). (Resident, Research)            |
| 2010 - 2010       | Megan Miller, MD Mercy Medical Center, Iowa City, Current Position: Anesthesiologist (mentee for the Midwest Anesthesia Resident Conference presentations). (Resident, Research)                         |
| 2010 - 2010       | Wasim Ahmed, MD Cedars Sinai Medical Center, Los Angeles, CA, Current Position: Fellow in Cardiac Anesthesia (mentee for the Midwest Anesthesia Resident Conference presentations). (Resident, Research) |
| 2011 - 06/2012    | Tyler Kerr, MD University of Iowa, Current Position: Resident in Anesthesia(mentee for the Midwest Anesthesia Resident Conference presentations). (Resident, Research)                                   |
| 06/2011 - 06/2012 | Shuchita Garg, MD University of Iowa, Current Position: Resident in Anesthesia (Mentee for the Midwest Anesthesia Resident Conference presentations). (Resident, Research)                               |
| 10/2012 - Present | Sheena Weaver, M.D. Vanderbilt University, Current Position: Assistant Professor Anesthesia. (Faculty, General Mentorship)   |
| 12/2012 - 10/2013 | Jonathan Weaver Vanderbilt University, Current Position: Resident in Anesthesia. (Resident, Research)  |
| 02/2013 - 10/2013 | Bradley Rodgers Vanderbilt University, Current Position: Resident in Anesthesia. (Resident, Research)  |
| 04/2013 - 10/2013 | Rasesh Desai Vanderbilt University, Current Position: Resident in Anesthesia. (Resident, Research)   |
| 09/2013 - Present | Justin Richards, M.D. Vanderbilt University, Current Position: Resident in Anesthesia. (Resident, Research)  |
| 12/2013 - Present | Anna Allred, M.D. Vanderbilt University, Current Position: Fellow in Critical Care. (Resident, General Mentorship)   |
| 10/2014 - Present | Brianna Witherspoon, R.N., Dr.N.P. Vanderbilt University, Current Position: ACNP Neuro ICU. (Faculty, Research)  |
| 01/2015 - Present | Melissa Murphy Vanderbilt University, Current Position: Resident in Anesthesia. (Resident, Research)   |

## Other Significant Activities

|         |   |
|---------|---|
| 2005    | UIHC SICU Website Conception, Development and Implementation: Dedicated SICU website for the Surgical Intensive Care Unit at the UIHC Department of Anesthesia. The website has been an important factor in the ongoing recruiting efforts for the critical care fellows.                 |
| 2006    | ICU Electronic Billing Sheet: Electronic billing sheet for the physicians of the SICU. This included the billing codes and diagnoses which could be electronically signed.  |
| 2006    | 10th Hour Anesthesiology Review: Created and implemented an open access website for Anesthesia Board Review. This site has been online since 2006 and has registered users from more than 43 countries. <a href="http://www.anesthesia-review.com/">http://www.anesthesia-review.com/</a> |
| 10/2006 | IPR Perioperative Anesthesiology Note: Created a new progress note for the department of Anesthesiology to document perioperative anesthesiology events.  |
| 2007    | Carbon Monoxide Toxicity Referral Mechanism: Developed a referral mechanism for streamlining the patient referral for carbon monoxide toxicity.   |
| 2007    | Anesthesia Operating Room Reordering System: This involved a web-based ordering system which automatically linked to a pager system to notify the anesthesia tech for needed supplies.  |
| 2008    | SICU Difficult Airway Cart: Implemented, along with Nurse managers, the revision, purchase and reorganization of airway equipment for the difficult airway cart for the SICU.   |
| 2008    | ICU Inventory Management Project: Created and implemented the Inventory Management project . This system maintained a digital photo/bar code and alternate names archive of more than 200 special order products.   |
| 2009    | The Research Patient Recruitment Notification Process: Developed an intuitive web page based alert and notification system for residents, fellows and nurses, to notify the research nurse or PI about possible patient recruits.   |
| 08/2009 | A/e: Anesthesia Exchange Blog Based Platform: Blog based platform that can be used for targeted delivery of study material.   |
| 02/2010 | 10th Hour Anesthesiology Review App for the Apple iPhone: Created in collaboration with   |

|         |   |
|---------|---|
|         | Innovate LLC. This was the first Anesthesia Board Review App in iTunes store worldwide.   |
| 09/2010 | Peds Anesthesia App for the Apple iPhone: Created in collaboration with Innovate LLC.   |
| 2011    | Epic Standardized Order Sets Project : Created standardized order sets for vasoactive medications for use in the ICU  |
| 2011    | Physician Leader for the SICU Infection Data Collection Project: Team collected admission data of all patients admitted to the SICU for analysis on the causal pathways for patients developing VAP.  |
| 2011    | Neurocritical Care Protocol Development for the ICU Care of Subarachnoid Hemorrhage Patients: With Drs. David Hasan (Dept of Neurosurgery) and Joss Thomas (Dept of Anesthesia).  |
| 01/2011 | CCRN Review App for Apple iPhone/iPod Touch: In collaboration with Innovate LLC. This App was the first of its kind in Iowa and was featured on the University of Iowa Hospitals and Clinics Chief Nursing Officer weekly blog.   |
| 10/2012 | Division of Critical Care Website design and implementation: Working with Drs Parmley and Weavind to expand the Division of Critical Care's web presence with a focus on the fellowship and educational aspects. Started in Oct 2012  |
| 01/2013 | Poster Session Moderator - at Society of Critical Care Medicine (Annual Congress): Moderated poster presentation session on day 2 of SCCM in San Juan, PR   |
| 02/2013 | Transcranial Doppler Training Course: Completed a comprehensive training session on transcranial doppler assessment in the ICU at UCLA  |
| 04/2013 | Moderator at Poster session- NWAC 2013: Moderated poster presentation session at the NWAC World Anesthesia Congress in Bangkok, Thailand  |
| 05/2013 | ICU survival guide for the IPAD: This is the creation of a ICU survival guide for residents rotating through the various ICU's at Vanderbilt. Dr Patrick Henson will be collaborating on this project with me.  |
| 07/2013 | Development of a Oxygen fail safe system for patient transport: Approved VICTR funding for prototype development.   |
| 08/2013 | 5 minutes of Critical Care: Launched the 5 minutes of Critical Care on Freeform- a interactive platform available to Vanderbilt employees for interactive case discussions.   |
| 09/2013 | Abstract Reviewer for SCCM Annual Congress 2014: reviewed abstracts and provided recommendations for the Oral presentation and Abstracts for the upcoming Annual congress in 2014   |
| 09/2013 | Abstract Reviewer for Chest World Congress 2014: Reviewed annual congress abstracts for the upcoming Chest world congress in Barcelona in 2014  |
| 09/2013 | Review articles on demand: Created sets of review articles in book format for CVICU, BICU and the Neuro ICU for resident and fellows that is available at their workrooms. An electronic version is available of Dropbox for all fellows  |
| 10/2013 | Created and Launched the "Critical Care Question of the Day" program: This is an innovate approach to improve fellow faculty education in Critical Care using a question of the day (previous years Board review questions) that can be used on multiple mobile and desktop platforms |
| 12/2013 | Case of the Month- Online "Freeform" based discussion : This was a novel initiative for the Nursing core in the Neuro ICU. Initiated to serve the knowledge gap in the neuro ICU.   |
| 01/2014 | Moderator Poster presentation session at Society of Critical Care Medicine: Moderated poster session on Renal diseases at SCCM 2014.  |
| 04/2014 | Chair- Critical Care Session at the NWAC meeting in Vienna, Austria: I was invited to chair the Critical care sessions on day 3 of the NWAC 2014. I moderated 5 presentations on that day.  |
| 10/2014 | Emerging Leaders Series Program: Chosen by the executive leadership of the Dept of Anesthesia to participate in an accelerated program in Leadership skills training  |
| 01/2015 | Proposal to establish a NeuroCritical Care Fellowship at VUMC ( first of its kind in the state of TN): Presented the proposal to the GME committee for review. This will be followed by submission of the proposal to the UCNS new fellowship application process in 2015.            |
| 01/2015 | Poster Moderator: Society of Critical Care Medicine Jan 2015: Moderated posters on Endocrine and Nutritional Sciences   |
| 02/2015 | Hypertonic Saline in Subarachnoid Hemorrhage Patients Increases Risk for Acute Kidney Injury: This article was written about our original research in Anesthesiology News in Feb 2015   |

## Grants and Funding

Grant number unavailable  
Industry

2005 - 2006

Unrestricted Educational grant for restructuring the departmental library  
Acquired more than 50 new titles, 6 new work stations and implemented a tracking system for books in the library.  
Created a section for books authored by faculty within the department.  
Role: Principal Investigator  
Total Cost: \$10,000.00

Grant number unavailable    Kumar (PI)    2009 - 2011  
Eli Lilly and Co  
Prowess Shock Trial. Safety and Efficacy of Drotrecogin Alpha in adult patients with septic shock.  
Enrolled 5 out of 6 allotted patients  
Role: Principal Investigator  
Total Cost: \$50,000.00

## Honors / Awards

|         |  |
|---------|--|
| 2002    | Gulf Atlantic Anesthesia Residents Conference-2nd Place, Gulf Atlantic Anesthesia Residents Conference   |
| 2006    | Excellence in Teaching Award, Department of Anesthesia, University of Iowa Hospitals and Clinics   |
| 2007    | Fellow (Inducted into the College of Chest Physicians), American College of Chest Physicians (FCCP)  |
| 2007    | Collegiate Teaching Award Nomination, University of Iowa College of Medicine   |
| 2007    | Excellence in Teaching Award, Department of Anesthesia, University of Iowa Hospitals and Clinics   |
| 2008    | Collegiate Teaching Award Nomination, University of Iowa College of Medicine   |
| 2009    | Innovation in Anesthesia Education Award (nominated), International Anesthesia Research Society (IARS)   |
| 2010    | Innovation in Anesthesia Education Award Nominee, International Anesthesia Research Society (IARS)   |
| 05/2010 | Certificate of Excellence for Medical Student Education, University of Iowa Carver College of Medicine   |
| 10/2011 | Faculty Focus Spotlight, University of Iowa, Carver College of Medicine, Faculty focus spotlight interview which was posted on the University webpage and on display panels throughout the college |
| 01/2013 | Fellow (Inducted into the College of Critical Care Medicine), Society of Critical Care Medicine  |

## Patents & Copyrights

|         |   |
|---------|---|
| 06/2006 | 10th Hour Anesthesiology Review. AB Kumar. Anesthesia Board Review material. (Copyright)  |
| 10/2008 | Systems and Methods for Endotracheal Tube Placement. (12261268) (Pending)   |
| 2011    | Amoeba Gel Pads: Self Contained Landmark and Ultrasound Aide for Medical Use. Provisional patent filed in July 2011. (Provisional patent filed) (Pending) |

## Publications

### Peer Reviewed Publications

#### Research Articles

1. Smith JJ, **Kumar AB**, Cutkomp J. Cross-Clamping During Elective Abdominal Aortic Aneurysm Surgery: A Template For Two Simulation Case Scenarios. Simulation in Healthcare : Journal of the Society for Simulation in Healthcare 2011 Apr;6(2):109-16. PMID: 21487347.
2. **Kumar AB**, Suneja M, Bayman EO, Weide GD, Tarasi M. Association Between Postoperative Acute Kidney Injury and Duration of Cardiopulmonary Bypass: A Meta-Analysis. Journal of Cardiothoracic and Vascular Anesthesia 2012 Feb;26(1):64-9. PMID: 21924633.

- Hata JS, Simmons JS, **Kumar AB**, Rickelman JH, Nickel EJ, Simmons ST, Torner J. The Acute Effectiveness and Safety of the Constant-Flow, Pressure-Volume Curve to Improve Hypoxemia in Acute Lung Injury. Journal of Intensive Care Medicine 2012 Mar;27(2):119-27. PMID: 21220269.
- Ranieri VM, Thompson BT, Barie PS, Dhainaut JF, Douglas IS, Finfer S, Gårdlund B, Marshall JC, Rhodes A, Artigas A, Payen D, Tenhunen J, Al-Khalidi HR, Thompson V, Janes J, Macias WL, Vangerow B, Williams MD, PROWESS-SHOCK Study Group. Drotrecogin Alfa (Activated) in Adults with Septic Shock. The New England Journal of Medicine 2012 May;366(22):2055-64. PMID: 22616830.
- Kumar AB**, Schweiger HW. Intraoperative Use of a Chest Physiotherapy System During Whole Lung Lavage for Pulmonary Alveolar Proteinosis. Therapeutic Advances in Respiratory Disease 2012 Aug;6(4):239-42. PMID: 22495262.
- Kumar AB**, Suneja M. Hetastarch-Induced Osmotic Nephrosis. Anesthesiology 2012 Sep;117(3):647. PMID: 22370625.
- Kumar AB**, Hata JS, Bayman EO, Krishnan S. Implementing a Hybrid Web-Based Curriculum for an Elective Medical Student Clerkship in a Busy Surgical ICU: Effect on Test and Satisfaction Scores. Journal of Surgical Education 2013 Jan.
- Hata JS, Togashi K, **Kumar AB**, Hodges LD, Kaiser EF, Tessmann PB, Faust CA, Sessler DI. The Effect of the Pressure-Volume Curve for Positive End-Expiratory Pressure Titration on Clinical Outcomes in Acute Respiratory Distress Syndrome: A Systematic Review. J Intensive Care Med. 2013 Jul 11. 2013 Jul; PMID: 23855040.
- AB Kumar, B Zimmerman and M Suneja. Obesity and Post-Cardiopulmonary Bypass-Associated Acute Kidney Injury: A Single-Center Retrospective Analysis. J Cardiothorac Vasc Anesth 2013 Sep; published ahead of print: PMID: 24075942.
- Saichaie K, Benson J, **Kumar AB**. How we created a targeted teaching tool using blog architecture for anesthesia and critical care education - The A/e anesthesia exchange blog. Medical Teacher 2014 Feb; PMID: 24571590.
- AB Kumar, Y Shi, MS Shotwell, J Richards, and JM. Ehrenfeld. Hypernatremia is a significant risk factor for acute kidney injury after subarachnoid hemorrhage- a retrospective analysis (Accepted July 2014). NeuroCritical Care 2014 Sep; PMID: 25231531.

### Review Articles

- Kumar AB**, Suneja M. Cardiopulmonary Bypass-Associated Acute Kidney Injury. Anesthesiology 2011 Apr;114(4):964-70. PMID: 21394005.
- AB Kumar and M Suneja. Obesity and Perioperative acute kidney injury. Journal of Critical Care 2014 Mar; PMID: 24666959.

### Case Reports

- Miller M, **Kumar AB**, Callison CR. Refractory Caffeine and Ergot-Induced Cervico-Cerebral Vasospasm and Stroke Treated with Combined Medical and Endovascular Approach. Neuroradiology 2012 Jan;54(1):77-9. PMID: 21468675.
- S Garg and AB Kumar. Echo Guided Management of Refractory Hypotension Following Alfieri Repair of Mitral Valve. Journal Cardiothoracic and Vascular Anesthesia 2012 Sep; PMID: 23022317.
- M Suneja and AB Kumar. Secondary Oxalosis Induced Acute Kidney Injury in Allograft Kidneys. Clinical Kidney Journal 2013 Jan;84-86.
- C Waller, B Vandenberg, D Hasan and AB Kumar. Stress Cardiomyopathy With an Inverse Tako-Tsubo Pattern in a Patient With Aneurysmal Subarachnoid Hemorrhage. 2013 May; PMID: 23742227.
- B Rodgers and AB Kumar. Rapidly Progressing Severe Cutaneous Adverse Reaction With Acute Kidney Injury After Drug Exposure: An Uncommon Presentation. Am J Ther. 2014 May 14 2014 May; PMID: 24832386.
- S Weaver and AB Kumar. Epithelioid hemangioma of the spine: an uncommon cause of spinal cord compression. Acta Neurologica Belgica 2015 Feb; PMID: 25672266.

### Letters

- Horowitz PE, **Kumar AB**. It's the Colloid, Not the Esophageal Doppler Monitor. Anesthesiology 2003 Jul;238-239. PMID: 12826872.
- Setty S, **Kumar AB**. Asystole on Anesthesia Induction in Adults: Don't Blame the Succinylcholine Alone. Minerva Anestesiologica 2012 Feb;78(2):258-9. PMID: 21712768.
- Authors Response to Clinical Commentary on "Cardiopulmonary Bypass-Associated Acute Kidney Injury". Anesthesiology 2012 Feb;116(2):491-492.
- JB Weaver and AB Kumar. Decompressive craniectomy for malignant intracranial hypertension complicated by acute intraoperative circulatory collapse in the setting of unremarkable TEE findings. ( Submitted Aug 2014). Brazilian Journal Anesthesia 2014.
- ABKumar, Zimmerman B and Suneja M. Obesity and Cardiopulmonary Bypass-Associated Acute Kidney Injury: Authors Reply. Journal of Cardiothoracic and Vascular Anesthesia 2014 Dec; Article in press: PMID: 25542848.

### Editorials



1. **Kumar AB**, Brennan TJ. Pain Assessment, Sedation, and Analgesic Administration in the Intensive Care Unit. Anesthesiology 2009 Dec;111(6):1187-8. PMID: 19934859.

### Abstracts

1. J Morse, L. Weavind and AB Kumar. Piloting a web-based □ question of the day□ module in a busy critical care fellowship. A single center experience. Critical Care Medicine 2014 Dec;42(12 ( supplement 112)):307.

## Non-Peer Reviewed Publications

### Research Articles

1. AB Kumar and RC Neeley. (Submitted) Radiation Exposure from CT scans in the Neuro ICU: a retrospective snapshot of patterns of exposure in a large academic medical center. NeuroCritical Care 2014 Dec;submitted.

### Book Chapters

1. **Kumar AB**, Thomas JJ. Neurosurgery in the Critically Ill Neurosurgical Patient.. Fundamentals of Neuroanesthesia: Editors Ruskin/Rosenbaum/Rampil . Editors: Ruskin/Rosenbaum/Rampil . 2013 Oct; ISBN: 978-0-19-975598-1.
2. **Kumar AB**. Coma and Brain Death. A Practical Approach to Neuroanesthesia. Editors: Todd Sloan, Paul Mongan and Sulpicio Soriano . 2013 Oct; ISBN: 978-1-4511-7315-4.
3. AB Kumar. Traumatic Brain Injury: Monitoring the Injured Brain . Current Concepts in Adult Critical Care 2015. Editors: Steven Greenberg and Edward Bittner. United States: Society of Critical Care Medicine; 2015 Jan;2015 edition 65-73. ISBN: 978-1-620750-247.

## Presentations

### Medically Challenging Cases

1. Haddad SH, Kumar AB, Nickel EJ. SCCM. 2006; Tachyphylaxis to Cisatracurium: A Report of Three Cases and Review of the Literature.
2. Weaver J and Kumar AB. American Society Anesthesia. ASA; San Francisco, California. 2013 Oct 11; Moya Moya disease complicated by acute intraoperative intracranial hypertension and circulatory collapse with normal TEE findings.
3. Desai R and AB Kumar. American Society of Anesthesia Annual meeting. ASA; San Francisco, California. 2013 Oct 12; Use of bedside ultrasound in the management of unexplained acute hypoxemia in a mechanically ventilated patient with acute inflammatory demyelinating polyneuropathy (AIDP).
4. Rodgers B and AB Kumar. American Society Anesthesia Annual meeting. ASA; San Francisco, California. 2013 Oct 12; Rapidly progressing bullous skin lesions with acute respiratory failure, rhabdomyolysis and acute kidney injury.

### Presentations at Scientific Meetings

1. Kumar AB, Hass B, Simmons JS, Schultz-Stubner S, Simmons S, Rickelman J, Hata JS. American Society of Anesthesiology Annual Congress. ASA; Atlanta, Georgia. 2005 Jan; A Retrospective Cohort Analysis of Early Versus Late Pressure Volume Curve Guided PEEP Therapy and Mortality in Acute Lung Injury.
2. Mecklenberg B, Hata JS, Kumar AB, et al. Society of Critical Care Medicine. San Francisco, California. 2006 Jan; Obesity and Acute lung injury. A Retrospective Cohort Analysis of Pressure Volume Loops.
3. Setty S, Kumar AB. Midwest Anesthesia Resident Conference. 2007 Mar; Cardiac Arrest on Anesthesia Induction in Adults.
4. Ahmed W, Kumar AB. Midwest Anesthesia Residents Conference. MARC; Chicago, Iowa. 2009 Apr; Acute Neuromuscular Weakness: A Complex Presentation of Guillain-Barre Syndrome.
5. Miller M, Kumar AB. Midwest Anesthesia Residents Conference. MARC; Chicago, Illinois. 2009 Apr; Ergotamine Induced Cerebral Vasospasm.
6. Stringham R, Kumar AB. Midwest Anesthesia Resident Conference. Chicago, Illinois. 2009 Apr 4; Non-Cardiogenic Pulmonary Edema and Acute Renal Failure Secondary to Dextran-40.
7. Miller M, Kumar AB,. American Society of Anesthesia Annual Meeting. ASA; New Orleans, Louisiana. 2009 Oct; Ergotamine Induced Recurrent Multifocal Cerebral Vasospasm.
8. Kumar AB, Hata JS, Bayman E. Society for Education in Anesthesia. Pittsburgh, Pennsylvania. 2010 May; Designing and Implementing a Web-based Curriculum for the Medical Student Clerkship in a Busy Surgical ICU- Our Three Year Experience.
9. Togashi K, Tessaman P, Kumar AB, Hata JS. Society of Critical Care Medicine. San Diego, California. 2011 Feb;

- The Effect of Pressure Volume Curves on Outcomes in ARDs: A Systematic Review.
10. Lake J, Kumar AB. Midwest Anesthesia Residents Conference. Chicago, Illinois. 2011 Apr; Vancomycin Induced Nephrotoxicity: Lessons Learned.
  11. Suneja M, Nair R, Kumar AB. Canada Critical Care Forum. CCCF; Toronto, Canada. 2011 Nov; Secondary Oxalosis Induced Acute Kidney Injury in Allograft Kidneys-The Potential Role of Vitamin C Supplementation.
  12. Kerr T, AB Kumar. Midwest Anesthesia Residents Conference. Chicago, Illinois. 2012 Mar; Fat Embolism: Positive Outcomes and Lessons Learned in Hindsight (3rd place winner).
  13. Garg S, Kumar AB. Midwest Anesthesia Resident Conference. 2012 Mar; Echo Guided Management of Refractory Hypotension Following Alfieri Repair of Mitral Valve.
  14. Kumar AB, Walker C, Kim E, Suneja M. European Society Anesthesia Annual Congress. Paris, France. 2012 Jun; Time On Cardiopulmonary Bypass and Risk of Postoperative Acute Kidney Injury.
  15. Kumar AB. Society of Critical Care Medicine. San Juan, Puerto Rico. 2013 Jan 12; Obesity and Acute Kidney Injury After Cardiopulmonary Bypass.
  16. Avinash B KUMAR. Society of Cardiovascular Anesthesia- annual congress. Miami, Florida. 2013 Apr 8; Is there anything better than serum creatinine in acute kidney injury.
  17. AB Kumar. NeuroCritical Care Annual meeting. NCS; Philadelphia, Pennsylvania. 2013 Oct 3; Acute kidney injury after SAH- incidence, risk factors and outcomes - a single center retrospective study.
  18. AB Kumar. SCCM ( Oral research presentations). Society of Critical Care Medicine; San Fransisco, California. 2014 Jan 10; Acute Kidney Injury after SAH- a single centre retrospective analysis.
  19. AB Kumar. IARS Annual Congress. International Anesthesia Research Society; Montreal, Canada. 2014 May 17; Hyponatremia is a significant risk factor for acute kidney injury after subarachnoid hemorrhage- a retrospective analysis.
  20. AB Kumar and C Buckingham. 12th Annual Neurocritical Care Society Meeting. Neurocritical Care Society; Seattle, Washington. 2014 Sep 11; Patterns of Radiation exposure in the Neuro ICU.
  21. AB King and AB Kumar. 12th Annual Neurocritical Care Society Meeting. Neurocritical Care Society; Seattle, Washington. 2014 Sep 13; Zebras that walk amongst us: a challenging case of Dural Venous Sinus Thrombosis with heparin resistance.
  22. V Tiwari and AB Kumar. Association of University Anesthesiologists. AUA; Nashville, Tennessee. 2015 Apr 23; Evaluating Peer-to-Peer Performance of Anesthesiology Critical Care Fellows in a Busy Multifaceted Fellowship Using Data Envelopment Analysis: A Case Study.

### **Panel Presentation**

1. L Chu, AB Kumar. American Society of Anesthesiologists Annual Meeting. ASA; Chicago, Illinois. 2011 Oct; Targeted Teaching Using Blogs in Anesthesia and Critical Care: Teaching Residents and Fellows in the Digital Age.
2. AB Kumar, Sladen R, Stafford-Smith M. Society of Cardiovascular Anesthesia- annual congress. SCA; Miami, Florida. 2013 Apr 8; Biomarkers: Is there anything better than serum creatinine.

### **Invited Presentation - Local**

1. AB Kumar. Department of Anesthesia and Teaching Scholars Network. University of Iowa Hospitals and Clinics; Iowa City, Iowa. 2009 Aug; Targeted Teaching Using Web Based Curriculum in Anesthesia Education-Will it Work?.

### **Invited Presentation - Regional**

1. AB Kumar. Iowa Difficult Airway Symposium. University of Iowa; Iowa City, Iowa. 2007 Oct; Managing a "Cannot Ventilate and Cannot Intubate" Scenario.
2. AB Kumar. The Iowa Regional Learning Congress for Organ Procurement Agencies and Iowa Donor Network. Iowa Donor Network; Coralville, Iowa. 2009 Apr; Goal Directed Management of Potential Donor Patients.
3. Iowa Anesthesia Symposium. University of Iowa- Dept of Anesthesia; Iowa City, Iowa. 2012 May; Update on Acute Kidney Injury (60mins).
4. AB Kumar. The NeuroOncology Society of India. Karnataka Chapter of the Neuro Oncology Society of India; Bangalore, India. 2014 Jul 17; Perioperative Complications after Neurological Surgery- An Intensivist's Perspective ( 60 mins).

### **Invited Presentation - National**

1. AB Kumar. National Learning Congress for Organ Donation and Transplantation. UNOS; Dallas, Texas. 2009; Does Time Based Achievement of DMGs (Donor Management Goals) Improve Lung Procurement Rates.
2. AB Kumar and A. Shander. Society of Critical Care Medicine. SCCM; San Juan, Puerto Rico. 2013 Jan; Anesthesia Year in Review.
3. AB Kumar. Current Concepts in Adult Critical Care. SCCM; Phoenix, Arizona. 2015 Jan 17; Traumatic Brain Injury: An Update on monitoring the injured Brain.

### **Invited Presentation - International**

1. S Krishnan, AB Kumar. Annual Congress-Society of Critical Care Medicine (SCCM). SCCM; Houston, Texas. 2012 Jan; SCCM-Anesthesia Year in Review.
2. AB Kumar. Iowa International Symposium. Cabo San Lucas, Mexico. 2012 Mar; Acute Kidney Injury in the ICU (60mins).
3. AB Kumar. Iowa International Symposium. Cabo San Lucas, Mexico. 2012 Mar; The Aneurysm is Fixed-Now What? ICU Implications Post Cerebral Aneurysm Clipping(60mins).
4. AB Kumar. Iowa International Symposium. Cabo San Lucas, Mexico. 2012 Mar; Ventilatory Strategies from the ICU to the Operating Room (60mins).
5. NWAC World Anesthesia Convention. Istanbul, Turkey. 2012 Apr; Fast Track Abdominal Surgery-A Reality Check (60mins).
6. NWAC World Anesthesia Convention. Istanbul, Turkey. 2012 Apr; Early Enteral Feeding in the ICU-An Update (60mins).
7. AB Kumar. NWAC World Anesthesia Convention. NWAC; Bangkok, Thailand. 2013 Apr 25; Mechanical Ventilation: Beyond Weaning Protocols.
8. AB Kumar. NWAC World Anesthesia Convention. NWAC; Bangkok, Thailand. 2013 Apr 25; Updates in Mechanical Ventilation.
9. AB Kumar. NWAC World Anesthesia Convention. NWAC; Bangkok, Thailand. 2013 Apr 27; New Modes of Mechanical Ventilation.
10. Aviansh B Kumar. NWAC 2014. Vienna, Austria. 2014 May 2; Physical Therapy and Early mobilization in the ICU - beyond just passive range of movements.

### **Invited Presentation - Other**

1. Avinash B Kumar. NWAC 2014. NWAC; Vienna, Austria. 2014 May 2; From High Frequency oscillatory ventilation to prone positioning: New paradigms in the management of acute respiratory failure.

### **External Grand Rounds**

1. AB Kumar. Dept of Neurology (University of Iowa); Iowa City, Iowa. 2010 Oct; Hemodynamic Mangement of the Neuro ICU patient (60mins).
2. AB Kumar. Dept of Neurosurgery Grand Rounds. Department of Neurosurgery; Nashville, Tennessee. 2014 Jan 31; Obesity and Perioperative Outcomes- an update.
3. Avinash B Kumar. Dept. of Neurology Grand Rounds. Dept of Neurology; Nashville, Tennessee. 2014 Mar 28; Endpoints of Fluid Resuscitation:Why can't we conclusively answer the fluid question yet?.

### **Problem based learning discussion**

1. AB Kumar. Iowa International Symposium. Cabo San Lucas, Mexico. 2012 Mar; Arrhythmias in the Post-Surgical Patient.
2. AB Kumar. Iowa International Symposium. Cabo San Lucas, Mexico. 2012 Mar; Pitfalls in the Diagnosis of Brain Death.
3. AB Kumar. NWAC World Anesthesia Convention. NWAC; Istanbul, Turkey. 2012 Apr; The Volume is In But the Blood Pressure is Still Low.
4. AB Kumar. NWAC 2014. NWAC; Vienna, Austria. 2014 May 1; The fluids are in but the blood pressures are low - changes in management strategies.
5. AB Kumar. IARS Annual Congress. International Anesthesia Research Society; Montreal, Canada. 2014 May 18; Obesity and Perioperative Outcomes- Beyond the Obesity Paradox.

### **Workshop**

1. AB Kumar. Iowa Difficult Airway Symposium. University of Iowa; Iowa City, Iowa. 2007 Aug; Difficult Airway Workshop: Fiberoptic Intubation Through Supraglottic Devices.
2. Kumar AB. Society for Education in Anesthesia (SEA)- Annual Meeting. Society for Education in Anesthesia; Pittsburgh, Pennsylvania. 2010 Jun; Targeted teaching using Blog Architecture.
3. Kumar AB, Sedar D and Boesel J. Neurocritical Care Society Annual Congress. NCS; Seattle, Washington. 2014 Sep 13; The Neurocritical Care Airway ( 4 hours).

### **Podcasts / Webinar**

1. University of Iowa; 2006; Systolic Pressure Variation: The Practical Issues.
2. 2006; Mini Broncho Alveolar Lavage.
3. 2006; Pflex Methodology for Determining Optimal PEEP.
4. 2007; Management of Acute Hypertensive Emergencies.

5. Anesthesia Exchange Blog. University of Iowa Hospitals and Clinics; 2010 Apr 4; Approach to Sepsis in the ICU.
6. Anesthesia Exchange Blog. Iowa City, Iowa. 2010 Jun; Introduction to Biomarkers in Acute Kidney Injury.
7. Anesthesia Exchange Blog. Iowa City, Iowa. 2010 Jul; Diagnosis of Pheochromocytoma.
8. Anesthesia Exchange Blog. Iowa City, Iowa. 2010 Aug 8; Targeted Management of a Potential Organ Donor.
9. Anesthesia Exchange Blog. Iowa City, Iowa. 2010 Sep; Procalcitonin-The Biomarker That Tell Us When To Stop Antibiotics.
10. Anesthesia Exchange Blog. Iowa City, Iowa. 2011 Jul; APRV- Short Primer.

### **Visiting Professor**

1. AB Kumar. University of Wisconsin (Madison); Madison, Wisconsin. 2009 Sep; Acute Kidney Injury in the ICU.
2. AB Kumar. Narayana Hrudyalaya Hospital; Bangalore, India. 2011 Feb; Acute Kidney Injury in the ICU-A Focus on Cardiopulmonary Bypass Associated AKI.

### **Internal Grand Rounds**

1. AB Kumar. Department of Anesthesiology Grand Rounds. University of Iowa Hospitals and Clinics; Iowa City, Iowa. 2009 Feb; Lung Protection in the Operating Room(OR). Applying ICU Strategies to the OR.
2. AB Kumar. Department of Anesthesiology Grand Rounds. Dept of Anesthesia, Vanderbilt University; Nashville, Tennessee. 2013 Apr 19; Obesity and Perioperative Outcomes -an update.
3. Avinash B Kumar. Departmental Grand Rounds. Department of Anesthesiology; Nashville, Tennessee. 2015 Jan 9; Traumatic Brain Injury: Monitoring the Injured Brain.