Curriculum Vitae
Kealy Ham, M.D.

Address:

Regions Hospital
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Education:

B.S.	Mechanical Engineering Biomedical Emphasis University of Minnesota Institute of Technology Minneapolis, MN	1995
M.D.	University of Minnesota Medical School Minneapolis, MN	2001
Residency	Internal Medicine and Pediatrics University of Minnesota Medical School Minneapolis, MN	2002
Residency	Internal Medicine University of Minnesota Medical School Minneapolis, MN	2004
Clinical Chief Resident	Veteran Affairs Medical Center Clinical Chief Resident in Critical Care and Emergency Medicine Minneapolis, MN	2005
Fellowship	Pulmonary and Critical Care Medicine University of Minnesota Medical School Minneapolis, MN	2008

Licensure:

Minnesota Medical License	2004-Present
DEA Registration	2004-Present

Certifications:

Basic Life Support	1991-Present
Advanced Cardiac Life Support	2001-Present
Internal Medicine Board Certification	2005,2015
Pulmonary Board Certification	2007
Critical Care Board Certification	2008
Research Compliance Training: HealthPartners Research Foundation	2006
Responsible Conduct of Research, Research Privacy & Integrity	2006

Clinical/Hospital Appointments:

Staff Physician — 2007-2013
North Memorial Medical Center
- Minneapolis, MN

Staff Physician, Pulmonary and Critical Care Medicine — 2007-Present
Regions Hospital
- Saint Paul, MN

Staff Physician, Lung and Sleep Clinic — 2007-Present
Health Partners Specialty Center
- Saint Paul, MN

Director – Medical Intensive Care Unit — 2012-Present
HealthPartners Medical Group
- Saint Paul, MN

Section Head – Critical Care Medicine — 2012-Present
Regions Hospital
- Saint Paul, MN

Department Chair – Critical Care Medicine 2012-Present
HealthPartners Medical Group
- Saint Paul, MN

Memberships in Professional Organizations:

American Medical Association 1999-Present

Minnesota Medical Association 1999-Present

American College of Physicians 2001-Present

American College of Chest Physicians 2005-Present

Society of Critical Care Medicine 2006-Present

American Thoracic Society 2006-Present

Honors and Awards:

National Science Foundation Undergraduate Research Program 1993

- Recipient of National Science Foundation grant for undergraduate research. Project consisted of using a computer-aided cryomicroscopy system to evaluate the heat and mass transfer effects of cryosurgery on human prostate carcinoma cells. Findings published and presented orally at program's conclusion. Principle Investigator: John Bischof.

American Society of Mechanical Engineers International Design 1996
Competition for Undergraduates Award

- Designed and built prototype of a spherical four-bar linkage mechanism for the continuous passive movement rehabilitation of the ankle. Design. Ham et al., "Spherical Four-Bar Linkage Mechanism for Continuous Passive Movement Rehabilitation Treatment of the Ankle," Proceedings of the 1996 ASME Design Engineering Technical Conferences and Computers in Engineering Conference, pp. 1-6 (Aug.18-22, 1996). Design referenced and reviewed for associated patent #6355048.

Minnesota Medical Foundation Scholarship 1997-2000

Health Partners Research Foundation Grant 2007

- NIH Grant support for developing and testing outcome prediction models for clinical-based research in Acute Respiratory Distress Syndrome (ARDS).

Regions Hospital Emergency Medicine Residency Ian Swatez 2013
Teaching Award

- Resident determined award of teaching excellence by faculty outside of Regions Hospital Emergency Medicine.

Best Doctors for Women 2013

- Minnesota Monthly.

Women in Medicine 2016

- One of six featured physicians. MetroDoctors. The Journal of the Twin Cities Medical Society.

Research and Scholarship:

Scientific Activities:

SciMed Life Systems, Inc. 1993-1994

- Biomedical engineering internship in research and development department of medical device manufacturer. Investigated, designed, built and tested various coronary angioplasty catheters and ancillary devices.
- Maple Grove, MN

Shriner's Burn Hospital Surgical Services 1995-1997

- Biomedical engineering research assistant in the surgical services laboratory. Investigated various cytokine and growth factor effects on cellular homeostasis and migration in a variety of basic science research projects related to the development of an artificial liver and artificial skin. Designed and executed experimental protocols involving microsurgery, ELISA, immunohistochemistry, immunofluorescence, cryomicroscopy, cellular transfection, and basic cell culture techniques. Principle Investigator: Martin Yarmush.
- Cambridge, MA

Iotek, Inc 1997

- Engineering consultant in research and development. Responsibilities included designing, building and testing prototype iontophoretic devices for an FDA phase I clinical device trial of instrumentation used for female bladder surgery.
- Minneapolis, MN

University of Minnesota Medical School 2003

- Independent academic research project reviewing data on the safety and efficacy of hip protectors in the geriatric population. Summary of research published in geriatric medicine journal. Faculty advisor: Dr. Edward Ratner.
- Minneapolis, MN

University of Minnesota Medical School 2004

- Wilder Foundation Grant-supported research project using quantitative and qualitative computer programs to perform secondary data analysis of Wilder Foundation database, looking at end of life issues in the homeless population. Faculty advisors: Dr. Edward Ratner and Dr. John Song.
- Minneapolis, MN

University of Minnesota Medical School 2006-Present

- Developed and compared two clinically-based prediction models for critically ill patients with Acute Respiratory Distress Syndrome. Logistic regression and neural network models were developed, tested and compared. Faculty advisors: Dr. Alain Broccard and Dr. Craig Weinert. Funding: NIH Training Grant.
- Minneapolis, MN

Clinical Trial Co-Investigator – Asthmatx, Inc 2006-2007

- Asthmatx Air2 Clinical Trial investigating bronchial thermoplasty for severe asthma. Successfully completed training of bronchial thermoplasty procedure, provided by Asthmatx, Inc. Mountain View, CA. Results published in AJRCCM; Jan 2010. 181(2):116-24.
- Saint Paul, MN

Clinical Trial Co-Investigator: Spiration, Inc 2011-2013

- Site co-investigator – VITAL (Valve Intervention Treatment Trial). Participated in this randomized controlled multicenter clinical trial evaluating the safety and efficacy of the IBV Valve System for the Treatment of Severe COPD. Sponsor: Spiration, Inc.
- Saint Paul, MN

Co-Investigator: American College of Chest Physicians 2011-2013

- Three phase quality improvement program to optimize venous thromboembolism prevention in medium to high risk patients in a joint effort with Regions Hospital Surgical and Medical Critical Care departments. Process includes a retrospective analysis, education, implementation of a practice alert to providers, and a post-intervention analysis. Data is part of a nationwide quality improvement program for thromboembolic disease prevention.
- Saint Paul, MN

Clinical Trial Co-Investigator: Asthmatx, Inc 2011-2012

- Post-FDA Approval Clinical Trial Evaluating Bronchial Thermoplasty in Severe Persistent Asthma.
- Saint Paul, MN

Health Partners Research Foundation 2014

- Red Fund grant for early mobility in the ICU patient population.
- St. Paul, MN

Grant Support and Contracts:

External Sources:

1. Site Principal Investigator 2016-Present
   Sponsor: Paratek Pharma, LLC
   A Phase 3 Randomized, Double-Blind, Multi-Center Study to Compare the Safety and Efficacy of Omadacycline IV/PO to Moxifloxacin IV/PO for Treating Adult Subjects with Community-Acquired Bacterial Pneumonia (CABP)
   Amount Awarded: $142,520 (projected)
   3% Effort

2. Site Principal Investigator 2015-Present
   Sponsor: La Jolla Pharmaceuticals
   A Phase 3, Placebo-Controlled, Randomized, Double-Blind, Multi-Center Study of LJPC-501 in Patients with Catecholamine-Resistant Hypotension (CRH)
   Amount Awarded: $82,874 (as of 9/23/2016)
   ClinicalTrials.gov # NCT02338843
   3% Effort

3. Site Principal Investigator 2015-Present
   Sponsor: Nestlé HealthCare Nutrition, Inc.
   The DIVINE Study: DIetary management of glucose VarIability iN thE ICU
   Amount Awarded: $42,517 (as of 9/23/2016)
   ClinicalTrials.gov # NCT02337556
   2% Effort

4. Site Principal Investigator 2014-2016
   Sponsor: AstraZeneca LP, Vanderbilt University
   Randomized Trial of Ticagrelor for Severe Community Acquired Pneumonia (TCAP), Protocol # 0001
   Amount Awarded: $46,357 (as of 2/01/2016)
   ClinicalTrials.gov # NCT01998399
   2% Effort

5. Site Principal Investigator 2014-2016
   Sponsor: Asahi Kasei Pharma America Corporation
   A Randomized, Double-Blind, Placebo-Controlled, Phase 3 Study to Assess the Safety and Efficacy of ART-123 in Subjects with Severe Sepsis and Coagulopathy
   Amount Awarded: $25,980
   2% Effort

Publications:

1993 **Ham**, Bischof. Use of Cryomicroscopy to Study Intracellular Ice Formation in Clustered and Isolated Cells of Prostate Carcinoma. Funding: *National Science Foundation Undergraduate Research Grant.* 1993.

1996 **Ham**, Erdman, Hong. Spherical Four-Bar Linkage Mechanism for the Continuous Passive Movement Rehabilitation of the Ankle. *Proceeding of the 1996 ASME Design Engineering Technical Conferences and Computers in Engineering Conference.*

1996 Hong, **Ham**, Erdman. Adjustable Spherical Four-Bar Linkages as Continuous Passive Motion Devices for Anatomic Joints Rehabilitation. *Proceeding of the 1996 ASME Design Engineering Technical Conferences and Computers in Engineering Conference.*

1999 Spears, **Ham**, Duncan. A science learning initiative with urban junior high school students. *Acad Med* 1999 May;74(5):601-602. 1999.

2001 **Ham**, Wu. 57y Woman with hypotension and breast tenderness. *American College of Physicians.*

2003 **Ham**, Ratner. Hip Fractures and Hip Protectors. *Topics in Geriatric Medicine and Medical Direction.* 2003.

2003 **Ham**, Rice. 83y Man with Sarcoidosis and History of Non-Hodgkin Lymphoma. Minneapolis, MN. *American College of Physicians.*

2007 Nagamatsu, Knopke-Mooney, **Ham**, MacIndoe, Aho, Broccard. Strict Glycemic Control and Insulin Requirements During and After Induced Hypothermia Following Cardiac Arrest. San Francisco, CA.. *American Thoracic Society.*

2007 **Ham**, Asche, Weinert, Broccard. Predicting Prolonged Mechanical Ventilation in ARDS Using Logistic Regression and Neural Network Models. Toronto, Ontario. *American Thoracic Society.*

2014 Keenan J, **Ham** K. Delayed Diagnosis: An Unusual Cause of Lactic Acidosis. Am J Respir Crit Care Med. 2014.

2014 **Ham** K, Hurley R, Koch M, Muntean C. Lung Nodule Care: A Multidisciplinary Approach to Triple Aim Care. *Chest.* 146. 2014

2016 Proposal Submission, ICU Move It: Early Mobility for the Critically Ill. 28th Annual National Forum on Quality Improvement in Health Care. Orlando.

2016 **Ham** K. Women in Medicine. *MetroDoctors.* 2016

Presentations:

Invited Presentations:

1. **National Science Foundation Undergraduate Research Program** 1993
   Presented findings of research using a computer-aided cryomicroscopy system which evaluated the heat and mass transfer effects of hypothermia on human prostate carcinoma cells. Principle Investigator: John Bischof. Minneapolis, MN.

2. **American Society of Mechanical Engineers International Design Competition** 1996
3. **for Undergraduates.**
   Designed, built, and presented the prototype of a spherical four-bar linkage mechanism for the continuous passive movement rehabilitation of the ankle. This design won third place in the international competition for undergraduates. This design was cited in the patent of the three-dimensional printer. Irvine, CA.

4. **Park Nicollet Critical Care Update**
   2007
   Case-based lecture for primary care physicians. Topics presented: cardiac, infectious, and hypovolemic shock. Saint Louis Park, MN.

5. **Regions Hospital Strategies in Primary Care** 2009
   Reviewed pulmonary care specialist work up for upper airway cough syndrome and how it can be managed by the primary care physician. Minneapolis, MN.

6. **Regions Hospital Strategies in Primary Care** 2013
   Presented pulmonary care specialist recommendations to primary care providers for the work up of shortness of breath in the patient with obesity. Minneapolis, MN

7. **Regions Hospital Strategies in Primary Care** 2015
   Updates for primary care providers on Chronic Obstructive Pulmonary Disease evaluation, diagnosis, and treatments. Minneapolis, MN

8. **National Society of Hospital Medicine Conference** 2016
   Presented Critical Care Medicine updates for hospitalists on the topics of mechanical ventilation and fluid management in critically ill patients. San Diego, CA

Poster Presentations:

1. Medalie, **Ham**, Tompkins, Yarmush, Morgan. Cultured human keratinocytes genetically modified to over express KGF, EGF or IGF-1 can be seeded onto human acellular dermis and transplanted as composite skin grafts to athymic mice; implications for the unique role of KGF in the stimulation of keratinocyte proliferation. *Tissue Engineering Society.* Cambridge, MA. 1996.

2. **Ham**, Wu. 57y Woman with Hypotension and Breast Tenderness. *American College of Physicians.* Bloomington, MN. 2001.

3. **Ham**, Rice. 83y Man with Sarcoidosis and History of Non-Hodgkin Lymphoma. *American College of Physicians.* Brooklyn Park, MN. 2003.

4. **Ham,** Asche, Weinert, Broccard. Predicting Prolonged Mechanical Ventilation in ARDS Using Neural Network and Logistic Regression Models. *American Thoracic Society.* Toronto, Ontario. 2008.

5. Keenan, **Ham**. An Unusual Case of Lactic Acidosis. *American Thoracic Society.* San Diego, California. 2014.

Teaching and Mentoring Activities:

1. Keys to Empowering Youth (KEYS) 1995-1997
   - Participated in program based out of Massachusetts Institute of Technology for young women interested in careers in science. Developed curriculum as an introduction to engineering and biological sciences for elementary-aged girls.

2. University of Minnesota Medical School 1997-1998
   - Chair of medical school class project: Community Action Through Advanced Learning for Youth in Science and Technology (CATALYST). Urban youth were invited to the medical school for a hands-on program about science and technology in medicine.

3. Phillips Neighborhood Clinic 2003
   - Volunteer physician in clinic run by University of Minnesota medical students. Provided direct medical care to an uninsured/underinsured indigent patient population. Clinical Advisor: Dr. John Song.

4. University of Minnesota Medical School 2006-Present
   - Pulmonary pathophysiology small group leader for second year medical students. Small group discussions of case studies for clinical applications of pulmonary pathophysiology lecture materials.

5. University of Minnesota Medical School 2007-Present
   - Lecture series for residents rotating in pulmonary medicine. Core lecture topics include Chronic Obstructive Lung Disease, Sepsis and Acid-Base disturbances, Mechanical Ventilation, Fluid Management, Sedation.

6. University of Minnesota Medical School 2011-Present
   - Faculty mentor for first and second year medical students interested in pursuing careers in Internal, Pulmonary, or Critical Care Medicine.

7. University of Minnesota Medical School 2016-Present
   - Faculty coach for internal medicine residents interested in pulmonary and critical care medicine.

Clinical Activities:

Variety Club Children's Hospital 1991-1995
- Provided nursing assistance and hospital clerical support in a pediatric hematology and oncology ward. Assisted in direct patient care and provided administrative services for house staff.
- Minneapolis, MN

Community University Health Care Center 2001-2004
- Continuity clinic experience with Dr. John Song. Clinic provides service to underserved community with large immigrant population and patients with limited socioeconomic resources.
- Minneapolis, MN

Veterans Affairs Medical Center 2001-2004
- Continuity clinic experience with Dr. Anne Joseph and Dr. Stephanie Anderson.
- Minneapolis, MN

Phillips Neighborhood Clinic 2003-2004
- Physician Volunteer with responsibility for teaching second, third and fourth year medical students as well as providing free health care to the indigent population of Minneapolis.
- Minneapolis, MN

Chiang Mai University 2004

- Rotation in international and tropical medicine with clinical experiences in both hospital and ambulatory settings. Liason – Dr. Patricia Walker.
- Chiang Mai, Thailand

Health Partners Specialty Center 2008-Present

- Provider in Lung and Sleep specialty clinic. Diverse patient population and Pulmonary disease spectrum. Hospital based consultations and interventional pulmonology.
- Saint Paul, MN

Regions Hospital 2008-Present

- Staff physician in pulmonary and critical care medicine. Director of Medical Intensive Care Unit and Interim Head of Critical Care. Additional responsibilities include teaching medical students, residents and fellows in this University of Minnesota affiliated teaching hospital. Lead physician for Endobronchial Ultrasound Program.
- Saint Paul, MN

Professional Program Development, Committees, and Quality Improvement Projects:

Endobronchial Ultrasound Program Development 2009

- Founding physician.

Lung Nodule Virtual Clinic 2010

- Founding pulmonary physician.

Medical Executive Committee 2013

Medical Doctors Senior Leadership Team 2013

- Member

Standardization of Mechanical Ventilation across intensive care units and hospitals within the Health Partners network 2013

- Founding physician.

Alcohol Withdrawal Protocol 2013

- Pilot and Implementation

Regions Hospital Central Peer Review Committee 2014

Early Mobility Program in Critical Care Patients, "ICU Move It." 2014

- Founding physician.

Under-pads Study 2015

- Principle investigator for quality improvement program to decrease use of indwelling urinary catheters and instead use under – pads – weighing for inputs and outputs.

Medical Stewardship Committee 2016

Antibiotic Stewardship Committee 2016

- Member.

IRB Committee 2016

- Member.

Lung Cancer Screening and Center of Excellence 2016

- Member.

I-CAM, CPOT, Early Mobility, RASS "ICER" across ICUs 2016

- Founding physician