

Curriculum Vitae  
**Brett Michael Harnett, MS-IS**  
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### **Current Position**

[University of Cincinnati](#); Cincinnati, OH  
Research Assistant Professor, Department of Surgery  
University Senator At-Large  
IT Division Director  
March 2004 – Current

Summary/highlights: Research scientist/manager overseeing the technology management and development for application, network and core services for the Center for Surgical Innovation at UC and Department of Surgery. This includes assessment, system design, project management, translational research, integration and implementation of technologies such as devices, telemedicine, medical informatics, data collection/analysis as well as management of technical staff associated with the projects. Other responsibilities include HIPAA security, grant writing, partnership development and technical liaison for industrial, international, governmental, academic partners, vendors. This includes ad hoc committee member for the reengineering of UC Physicians and the academic health center.

### **Employment History**

[NASA Medical Informatics and Technology Applications Consortium](#)  
Virginia Commonwealth University/Medical College of Virginia; Richmond, VA  
Director, Experimental Information Technology/Faculty Research Assistant  
July 1999 - March 2004

- System designer and flight participant for virtual reality surgical simulations studies onboard NASA's KC 135 microgravity lab.
- Chief engineer for VCU/MITAC participation in Shadow Bowl, situational awareness exercises at Super Bowl XXXVII in San Diego. Rapid design changes of a physiologic monitoring system (Lion Heart) to an agent detection platform used to sample air in the vicinity of Qualcomm Stadium with real time updates to a web server.
- Travel to Kosovo to review technical engineering of new telehealth center and conference in Prishtina.
- Designed and directed "Operation Lion Heart," a medical informatics research program to measure and assess data throughput of real-time physiologic parameters using cellular and low earth orbiting satellite infrastructures.
- Technical implementation of equipment and services for the Department of Corrections telemedicine program for VCU Health System.
- Direction of content for online lectures and distance learning for web streaming including multipoint bridged conferences and webcasting.
- Primary liaison to the U.S. State Department and USAID for telehealth services plan in Afghanistan.
- Coordination of tech-transfer of NASA/MITAC Intellectual Property from the University for Commercialization.
- Design and development of online/CD-based telemedicine courseware.
- Key participant in design and implementation of video and network architecture for operating rooms in Medical College of Virginia.
- Site reviews of the Space BioMedical Center and Railroad Hospital in Moscow, Russia for enhanced medical systems.
- Project manager/technical director for Mars Arctic Research Station telemedicine expedition; wireless telemetry of real-time vital signs to web server, transcoding of data.

- Travel to Kosovo to assess technical capabilities, telecommunications and network infrastructures at Prishtina Medical University for international relief efforts.
- Technical implementation for Operation Helping Hands in Semana, Dominican Republic.
- Implemented the first use of telementoring/education of live, laparoscopic surgery using Internet protocol over the existing LAN at VCU.

OrbitalMed LLC; Richmond, VA  
Chief Technology Officer (Adjunct Position)  
January 2001 - March 2004

#### Yale University School of Medicine

NASA Commercial Space Center/ Medical Informatics and Technology Applications; New Haven, CT  
Telemedicine Systems Manager/systems programmer II  
January 1997 - June 1999

- Responsible for the design and implementation of an international web-based telemedicine system including clinical consultations, educational content/distance learning, integration of high-resolution medical imaging and collaboration tools.
- Communications and technical manager for [Everest Extreme Expedition \(E3\)](#). Coordination of satellite downlinks from Everest Base Camp for composite clinical data and real-time medical telemetry - presented live at TedMed2 in Charleston, SC and Olympus America.
- Installation and operation of systems for Operation Rainforest: low-bandwidth telemedicine from remote clinics in the Amazon Basin of Ecuador.
- Responsible for negotiating, designing and implementing network link in Kiev for NASA and the National Space Agency of the Ukraine (NSAU) to facilitate the Collaborative Ukrainian Experiment (CUE) during [Shuttle Columbia flight STS 87](#).

Harnett Consulting; East Hartford, CT  
Marketing technology consultant/developer  
January 1996 - December 1996

Jonathan Wisconsin; Marlborough, CT  
Director of multimedia services/system administrator  
April 1992 - December 1995

Infield Publishing; Ellington, CT  
Consultant/owner  
May 1989 - April 1992

#### Education

University of Cincinnati College of Business; Cincinnati, OH

[Master of Science; Information Systems](#)

September 2004 - June 2007

Eastern Connecticut State University; Willimantic, CT

[Bachelor of Science; Business Administration](#), economics concentration

September 1982 - May 1984

Manchester Community Technical College; Manchester, CT

September 1980 - May 1982

Nathaniel Hawthorne College; Antrim, NH

September 1978 - May 1980

Dale Carnegie graduate

September 1985 - January 1986

**External Peer Review Member**

National Institutes of Health, Scientific Review Board, Washington DC  
New England Journal of Medicine  
Telemedicine and e-Health (Editorial Board Member)  
Medical and Biological Engineering and Computing  
IEEE Transactions on Information Technology in Biomedicine  
Journal of Health Care for the Poor and Underserved  
Health Research Board - Research Funding and Policy Division, Dublin, Ireland

**Published Peer Reviewed Manuscripts**

**Harnett B**, Doarn C, Rosen J, Hannaford B, Broderick, T. Evaluation of Unmanned Airborne Vehicles and Mobile Robotic Telesurgery in an Extreme Environment. *Telemed J e Health* 2008; 14:539-544

Sterbis JR, Hanly RJ, Herman BC, Marohn MR, Broderick TJ, Shih SP, **Harnett B**, Doarn CR, Schenkman NS. Transcontinental Telesurgical Nephrectomy Using the da Vinci Robot in a Porcine Model. *Urology*; 2008; 71(2)

**Harnett, BM**. Telemedicine Systems and Telecommunications. *J of Telemedicine and Telecare*. 2006; 12(3):4-15

**Harnett BM**, Broderick T, Doarn CR, Rafiq A, Muth T, Merrell RC. Dynamic automated data collection for human performance. *J Information Technology in Healthcare*. 2004; 2(3):175-186

**Harnett BM**, Doarn CR, Zhao X and Merrell RC. Redundant Wireless Communication Technologies for Real-Time Surveillance: Elsevier's *Telematics and Informatics* 2004; 21(4):375-386

Zhao X, Fei DY, Doarn CR, **Harnett BM**, Merrell RC. Project Report: A telemedicine system for wireless home healthcare based on Bluetooth and the Internet. *Telemed J e Health* 2004; 10 (Supp 2):110-116

Fedyukin IV, Reviakin YG, Orlov OI, Doarn CR, **Harnett BM**, Merrell RC. Experience in the Application of Java Technologies in Telemedicine. *Journal of Applied Health Technology eHealth International* 2002; 1(1):3

Doarn CR, Fitzgerald S, Rodas E, **Harnett B**, Prabe-Egge A, Merrell RC. Telemedicine to Integrate Intermittent Surgical Services in to Primary Care. *Telemed J and e-Health* 2002; 8(1):131-137

**Harnett BM**, Doarn CR, Russell KM, Kapoor V, Merriam NR, Merrell RC. Wireless Telemetry and Internet Technologies for Medical Management: A Martian Analogy. *Aviat Space and Environ Med*. 2001; 72(12):1125-1131

Broderick TJ, **Harnett BM**, Doarn CR, Rodas EB, Merrell RC. Real Time Internet Connections: Implications for Surgical Decision Making in Laparoscopy. *Annals of Surg*. 2001; 243 (2):165-171

Broderick TJ, **Harnett BM**, Merriam NR, Kapoor V, Doarn CR, Merrell RC. Impact of Varying Transmission Bandwidth on Image Quality in Laparoscopic Telemedicine. *Telemed J and e-Health* 2001; 7(1):47-53

**Harnett B**, Angood P, Merriam N, Satava R, Doarn CR, Merrell RC. The Benefits of Integrating Internet Technology with Standard Communications for Telemedicine in Extreme Environments. *Aviat Space and Environ Med*. 2001; 72(12):1132-1137

Satava RM, Angood PB, **Harnett BM**, and Merrell RC. The Physiologic Cipher at Altitude: Telemedicine and real-time monitoring of climbers on Mount Everest. *Telemed J*. 2000; 6(3):303-313

Rosser JC, Bell RL, **Harnett BM**, Rodas E, Murayama M, Merrell RC. Use of Mobile Low-Bandwidth Telemedical Techniques for Extreme Telemedicine Application. *American College of Surgeons J.* 1999; 189(4): 397-404

### **Textbooks**

**Harnett B.** Contributing Author: Patient Centered Medicine and Technology Adaptation. *Designing Emerging Healthcare System: Challenges and Solutions.* Rocker, C. (Ed) IGI Global. 2010. Hershey, PA. AT PRESS

**Harnett B.** Contributing Author: Creating Telehealth Networks from Existing Infrastructures. [Establishing Telemedicine. Developing Countries: From Inception to Implementation.](#) R Latifi (Ed) IOS Press 2008. Amsterdam. Pgs 55-65

**Harnett B.** Contributing Author: [Telemedicine Systems and Telecommunications.](#) ISBN: 1-85315-677-9 Wootton, R. (Ed) Publisher: Royal Society of Medicine Press 2007, London, England. Chapter 2, Pgs 15-34

**Harnett B,** Doarn CR, Merrell RC. Contributing Author: [Telemedicine. Encyclopedia of Biomaterials and Biomedical Engineering.](#) ISBN: 0-8247-4789-4 Marcel Dekker, Inc. 2005 New York, NY. Pgs 1449-1457

**Harnett B.** Contributing Author: Creating Telehealth Networks from Existing Infrastructures. *Establishing Telemedicine. Developing Countries: From Inception to Implementation.* R Latifi (Ed) IOS Press 2004. Amsterdam. Pgs 51-59

### **Abstracts/Posters**

Doarn CR, **Harnett BM**, Broderick TJ. Telesurgery: What are the Possibilities? 12th Annual Meeting and Exposition of the American Telemedicine Association, Nashville, TN. 2007. *Telemed and E Health* 2007; 12(2):190

Huffman L, Doarn CR, **Harnett B**, Moses G, Broderick TJ. Recent Advances in Robotic Telesurgery and Applications to Battlefield Trauma. 2nd Annual Meeting of the Association of Academic Surgeons. Phoenix, AZ. 2007

**Harnett BM**, Broderick TJ, Doarn CR, Huffman L, Rosen J, Hannaford B. Small Unmanned Aerial Vehicle as a Network Access Point for Tele-Robotic Surgical Intervention in the Battlefield. *Medicine Meets Virtual Reality 14.* Long Beach, CA. 2007

Lum MJH, Rosen J, King H, Friedman DCW, Donlin G, Sankaranarayanan G, **Harnett B**, Huffman L, Doarn C, Broderick T, Hannaford B. Telesurgery via unmanned aerial vehicle (UAV) with a field deployable surgical robot. *Medicine Meets Virtual Reality 15. JD Westwood et al, (Eds).* IOS Press. Amsterdam. 2007; 125: 313-315

Hoffman L, Doarn CR, **Harnett B**, Moses G, Broderick TJ. Recent Advances in Robotic Telesurgery and Applications to Battlefield Trauma. 2nd Annual Meeting of the Association of Academic Surgeons. Phoenix, AZ, 2007

Hanly RJ, Miller B, Herman BC, Marohn MR, Talamini MA, Broderick TJ, Doarn CR, **Harnett B**, Hasser CJ, Schenkman NS. Stereoscopic Robotic Surgical Telementoring: Feasibility and Future Applications. 10th Annual Meeting and Exposition of the American Telemedicine Association, Denver, CO. 2005. *Telemed and E Health* 2005; 11(2):247

**Harnett BM**, Broderick T, Doarn CR, Rafiq A, Muth T, Merrell RC. Dynamic automated data collection for human performance. *J Information Technology in Healthcare*. Poster Presentation, Medicine Meets Virtual Reality 13, Long Beach, CA, 2005

Zhao X, **Harnett B**, Rafiq A, Doarn CR, Merrell RC. An Online EMR System for International Telemedicine Consultation. 9th Annual Meeting & Exposition of the American Telemedicine Association. Tampa, FL. April 2004. Poster *Telemed J E Health* 2004; 10(Supp 1):S-120. 2004

Cone S, Carruci LR, Jinxing Y, Rafiq A, **Harnett B**, Doarn C, Merrell R. Acquisition and Evaluation of Radiography Images by Digital Camera. 9th Annual Meeting & Exposition of the American Telemedicine Association. Tampa, FL. April 2004. *Telemed J E Health* 2004; 10(Supp 1):S-38.

Rafiq, A. **Harnett B**, Merrell G, Doarn C, Merrell R. Telemedicine Application during a search for Genghis Khan in Mongolia. 9th Annual Meeting & Exposition of the American Telemedicine Association. Tampa, FL. April 2004. Poster *Telemed J E Health* 2004; 10(Supp 1):S-112

Rodas E, Rafiq, A, Doarn CR, **Harnett B**, Merriam N, Merrell RC, Broderick, TJ, Surgical Simulation in Microgravity. *SAGES*. Denver, CO. 2004. Video Abstract

### **Non-Peer Reviewed and Articles**

**Harnett et al** "[Group Works to Implement Telehealth Program at UC](#)" UC Academic Health Center – Findings, Volume 10 No. 11 November 2008

**Harnett**. "Should you allow live broadcasts of cases? Some answer definitive 'no' " Same-Day Surgery, AHC Media, Vol. 32, No. 6, June 2008

**Harnett**. "Telemedicine: To Mt. Everest and Beyond" American Society of Information Scientists, quarterly journal, Spring 2000

**Harnett**. "Advanced Medical Technology for Extreme Environments" Space Manufacturing 12; Proceedings from the 14<sup>th</sup> Space Studies Institute/Princeton Conference on Space Manufacturing, October 1999

**Harnett**. "Communicating from the Rooftop of the World in Real-Time" RT Imaging, July 1999

**Harnett**. "Technical diagram [Communications from Everest]" MD Computing, July/August 1999

### **Teaching**

Business of Medicine, UC COM (Ford); Technology Application in the Operations of Modern Medicine; 2009, 2010

Contemporary Issues in Medicine, UC COM (Doarn); Telecommunications in Medicine; 2008, 2009

[INTERalliance](#) UC educational host and student advisor; 2006, 2007

Telemedicine Course for Uzbekistan Army Physicians in cooperation with Partnerships for Peace/Information Management and NATO; Tashkent, Uzbekistan; 2003

Guest speaker, VCU Telemedicine Honors Course; 2001, 2002, 2003

Yale Telemedicine Course for international affiliates; 1999, 1998

### **Grants**

Co-PI: Telehealth Enhancement of Adherence to Medication in Pediatric IBD; 2010

Funding Agency - NIH

Principle Investigator: A Mobile Neural Network for Real-time Physiologic Monitoring; 2007

Funding Agency - University of Cincinnati Faculty Research Support Program. 2006

Co-PI: High Altitude Platforms Mobile Robotic Telesurgery

Funding Agency - US Army Medical Research and Materiel Command. 2005

**Speaking Engagements**

"Telesurgery: The Convergence of Telecommunications, Informatics and Robotics." Doarn CR, Harnett BM, Broderick T.J. [Healthcare Information and Management Systems Society](#), Panel Presentation. New Orleans, LA - February 2007

"Small Unmanned Aerial Vehicle as a Network Access Point for Tele-Robotic Surgical Intervention in the Battlefield" Medicine Meets Virtual Reality 15, Long Beach, CA – February 2007

"[Healthcare Symposium](#)" Alumni speaker/panelist, Eastern Connecticut State University, Willimantic, CT - December 2006

"Advanced Network Opportunities for Surgical Tele-Robotics" Center for Computational Sciences, University of Kentucky, Lexington, KY - February 2006

"Advanced Network Opportunities for Surgical Tele-Robotics" [Imagine the Possibilities Conference](#) - Bradley University; Peoria, IL - October 2005

"Advanced Network Opportunities for Surgical Tele-Robotics" [Fall 2005 Internet2 Member Meeting](#); Philadelphia, PA - September 2005

"Medical Informatics - A Binary Evolution" University of Cincinnati Surgical Grand Rounds; Cincinnati, OH - September 2004

"Redundant Wireless Communication Technologies for Bioterrorism Surveillance" American Telemedicine Association Annual Meeting; Tampa, FL - May 2004

"Zero Gravity Research Onboard NASA's KC-135 Aircraft" Virginia Aviation Museum, Celebrating 100 Years of Flight; Richmond, VA - December 2003

"Distance Medicine" Association of Information Technology Professionals; Regional Conference; Richmond, VA - August 2003

"Telehealth Technologies: Research and Application" Area Health Education Center (AHEC) Board of Directors Meeting; New Haven, CT (via teleconference) - June 2003

"NASA- Sponsored Research at VCU" Highland Springs High School, Engineering Center; Richmond, VA - May 2003

"Operation Lion Heart: Real-time physiologic data via cellular and LEOS" American Telemedicine Association Annual Meeting; Session Chairman; Orlando, FL - April 2003

"Developments in Wireless Telemetry" VCU Emerging Technology Day - April 2003

"Medical Informatics: A Technical Perspective" Advanced Health Informatics Presentation; VCU School of Medicine - March 2003

"Operation Lion Heart - Physiologic Telemetry Using Whatever the Heck is Available" Caribbean Telemedicine Association Meeting; San Juan, Puerto Rico - November 2002

"New Technologies in Telemedicine" Area Health Education Center (AHEC) Annual Meeting; Ledyard, CT (via teleconference) - October 2002

"Telemedicine Research at VCU" Virginia Biotechnology Summit and Governor's Conference on Technology Transfer and University Research; Tyson's Corner, VA - October 2002

"Telemedicine at VCU" Defining the virtual collaborative clinic model: Bringing medical expertise to remote sites in space and on earth - NASA; Albuquerque, NM - August 2002

"A Physiologic Data Routing Hub for Wireless Sensors: The VitalPoll" American Telemedicine Association Annual Meeting; Los Angeles, CA - June 2002

"Portable Telemedicine, Sensors and the VitalPoll" Distributed Medical Intelligence Conference VII; Park City, UT - March 2002

"Mobile Healthcare, Sensors and Medical Education," Roundtable Expert Participant, International Conference on Mobile Health; San Diego, CA - November 2001

"Telemedicine from the Mars Arctic Research Station: An Exercise for Remote Medical Sensing" Keynote Plenary Session/Telemedicine World at TeleCon 2000; Anaheim, CA - December 2000

"Arctic Circle Communications and Tools" Arctic Council on Telemedicine; U.S. State Department, Washington DC - November 1999

"Extreme Telemedicine" American Society of Information Scientists; Washington DC - October 1999

"H.323 and Distance Learning" Internet2 Global MegaConference; Richmond, VA - October 1999

"Mount Everest Telemedicine" Telehealth & Multimedia International Congress; Edmonton, Alberta Canada - August 1999

"Everest Educational Expedition" Olympus America; Melville, NY - May 1999

"Extreme Telemedicine" Space Studies Institute; Princeton University - May 1999

"The Future of Medicine [[Satava](#)]" Maryland Technology Showcase; Baltimore, MD - December 1998

"Internet Telemedicine" National Space Agency of Ukraine and the Ukrainian National Medical University; Kiev, Ukraine - September 1997

### **Awards and Acknowledgements**

[Eastern Connecticut State University](#) Alumni Fellows; Careers in Science, 2009, 2010  
Finalist - Infineon Technology Innovation Award; Greater Richmond Technology Council; 2003  
Technical/Network Design - [Kosovo Foundation for Medical Development](#), Kosovo; 2002  
Special Recognition - Western Regional Medical Authority, Jamaica; 2001  
Special Recognition - Moscow State Medical University, Moscow, Russia; 2000

### **Committees/Faculty Service**

University of Cincinnati Faculty Senate - Senator At Large

- *Elected position (2010-2012)*

UC Senate Standing Committee for Information Technology

- *Advisement to Faculty Senate on information technology issues*

UC COM Senate Ad Hoc Committee on Faculty Affairs

- *Advisement to Faculty Senate on GEO faculty bylaws*

UC COM Senate Lab Management Course Steering Committee

- *Creation of lab management course for incoming faculty*

UC Collaborative Telehealth Steering Committee (co-chair)

- *UC COM, UCP, THA, CCHMC, to centralize all telehealth activities and provide guidance*

West Chester Medical Center Surgical Suite Vendor Selection

- *THA, advising of operating room video routing implementation*

University Hospital Surgical Initiative Scheduling and Access Project

- *THA, advising of technology implementation, The Health Alliance*

UC/UCP Re-engineering IT Task Force

- *UCP, numerous committees as required ensuring proper technical architecture and strategy, reports to UCP management via team leaders*

UC AIT&L Position Search Committee

- *UC Information Technology, as needed, interview candidates in various positions*

UC COM Software Development Group

- *As needed, to ensure compliance, scalability, interoperability, reports to UCit management*

UC Information Technology Group / Policy Committee

- *UC Information Technology, to communicate across departments*

West Chester Medical Center Planning Committee

- *Operating room/facilities design, The Health Alliance*

UC/Health Alliance Advanced Technology Group

VCU PDA Special Interest Group

VCU Plant Operations/Operating Room Wiring Initiatives

VCU Internet2 Development Group

Yale University Telemedicine Advisory Board

Yale University NASA/CSC Technology Committee

Yale University NASA/Space Biomedical Center Joint Oversight Committee - technical advisor

### **Organizations**

Reuters Insight [Community of Experts](#)  
American Telemedicine Association (ATA)  
Institute of Electrical and Electronics Engineers (IEEE)  
American Medical Informatics Association (AMIA)

### **Miscellaneous**

Judge, Science & Engineering Expo District 11 Science Day 2005 - 2008  
Judge, UC Graduate Poster Forum 2005 - 2008  
Completion of high altitude physiologic training; Andrews Air Force Base, Maryland – 2003, 2007  
BioBiz Entrepreneurial mentor for VCU Business School MBA student via funding from the [Ewing Marion Kauffman Foundation](#) - 2002  
Judge, Greater Richmond Technology Council, Infineon Technology Innovation Award - 2002  
Science panelist for multi-site videoconference, The Jason Project "Frozen Worlds" Richmond Science Museum - 2002  
Judge, [FIRST](#) (For Inspiration and Recognition of Science and Technology) Lego League Robotic Competition; Theme: Arctic Impact - 2001  
"Life Signs: Personal Health Protection" health.discovery.com interview January – 2001

### **Community Science Service**

INTERalliance educational host and student advisor 2006 & 2007  
NASA Langley FIRST Robotics Competition; pit crew, 2001, 2002, 2003

Current CV hosted at [www.harnett.com](http://www.harnett.com)