

## Kevin Neil Montgomery, Ph.D.

National Biocomputation Center  
Stanford University School of Medicine  
701A Welch Road, Suite 1128  
Stanford, California 94305  
650.498.6978 (fax: 5626)

### EXECUTIVE SUMMARY:

- 20 years of full-time technical experience in industry, government, and academia
- 16 years of management experience
- Ph.D. in computer engineering: specializing in imaging, visualization, and networking

### CURRENT APPOINTMENTS:

*Technical Director*, National Biocomputation Center, Stanford University  
*Associate Professor*, University of Texas Health Science Center- Houston  
*Chief Executive Officer*, Intelesense Technologies  
*IPA*, Telemedicine and Advanced Technology Research Center (TATRC), US Army-MRMC  
*Adjunct Associate Professor*, John A Burns School of Medicine, University of Hawaii

### EDUCATION

|       |   |      |
|-------|---|------|
| Ph.D. | Computer Engineering, University of California; Santa Cruz, CA  | 1996 |
|       | (Dissertation: "Automated 3D Reconstruction of Neural Elements from Transmission Electron Microscope Images") |      |
| M.S.  | Computer Engineering, University of California, Santa Cruz, CA  | 1994 |
| B.S.  | Computer Science, University of Delaware, Newark, DE  | 1988 |

(Note: Education was concurrent with full-time employment for all degrees)

### EXPERIENCE

***Health Sciences Center (University of Texas-Houston)*** *March 2007 to present*  
*Associate Professor*. Applied research in advanced visualization, telemedicine, and simulation.

- Apply research in surgical planning and simulation to directly impact medical care.
- Wireless and advanced visualization technologies for public health, telemedicine, and disaster management.

***Telemedicine and Advanced Technology Research Center (US Army MRMC)*** *May 2005 to present*  
*Senior Scientist, TATRC-West, Special Assistant to the Director*. Oversee DOD projects

- Lead a \$20M+ portfolio of DOD investment in biosensors, biosurveillance, disaster medicine and response
- Aid in strategic direction of medical modeling and simulation portfolio

***National Biocomputation Center (Stanford University)*** *May 1998 to present*  
*Technical Director*. Apply advanced computation and visualization to revolutionize medicine.

- Plan, design, implement, and foster basic and applied research for computer-based applications in surgical planning, assistance, simulation, and wireless telemedicine.
- Coordinated technical aspects of multiple projects across Computer Science, Engineering, Surgery, Radiology, and Education.
- Produced a Virtual Environment for Surgical Planning and Analysis (VESPA/VERS), microsurgery training simulator, soft-tissue modeling, anatomical atlases, CT/MR segmentation, intraoperative navigation technologies, and wireless telemedicine.

***Intelesense Technologies*** *January 2005 to present*  
*CEO/Co-Founder*: Worldwide, real-time integrated environmental and public health monitoring

- Development of real-time, intelligent, worldwide sensor network with GIS-based display
- Create technology, produce business plan, obtain investment, build successful core team

- Raised over \$1.1M in R&D funds from government and other sources
- Established cooperative agreements with government and partner companies for the market
- Deployment of real-time environmental and public health monitoring systems worldwide

***MediLink Incorporated***

*August 1997 to August 2000*

*President and CEO: Worldwide, real-time telemedicine.*

- Commercialization of vital signs telemedicine research project.
- Create technology, produce business plan, obtain investment, build successful core team
- Established cooperative agreements with government and partner companies for the market evaluation and deployment of a real-time vital signs and video telemedicine product.
- Corporate assets and intellectual property acquired by MDHome Inc.

***NASA Ames Research Center (Sterling Software)***

*August 1991 to April 1998*

*Technical Director/Principal Researcher/Project Manager; 3D Imaging and Visualization.*

- Applied image processing techniques to the study of biological neural networks.
- Extensive research, design, coordination, implementation, and deployment of a system for recognition, 3D reconstruction, and visualization of biological/medical tissue.
- Produced the Virtual Environment for Reconstructive Surgery: a virtual reality application to allow surgeons to plan complex craniofacial surgeries using data reconstructed from CT scans
- Technical areas include image processing, computer graphics, graphical user interface design, virtual reality, device control, distributed and parallel computation, networking, and supercomputing.
- Managed group of other MS/PhD researchers, managed collaborations with external groups.

***Hewlett-Packard Company, Information Networks Division***

*August 1988 to August 1991*

*Principal networking engineer; Distributed Computing/Network Applications/Networking.*

- Specialized in directory services and distributed information technologies.
- Implemented XDS (precursor to LDAP), Remote Operations Service Element.
- Development team for first commercial implementation of X.500 Directory Services (OSI).
- Research, design, inter/national standards representation (ISO, NIST), and system integration

***Hewlett-Packard Company, Avondale Division***

*April 1987 to May 1988*

*Software Engineer; HP5898A Microbial Identification System- identifies organic compounds based on a chromatographic profile.*

- Pattern matching (cluster and principal components analysis), data communications, and device drivers.

***University of Delaware, Departments of Elec Eng and Comp Sci,***

*August 1985 to August 1987*

*Laboratory Manager; hardware troubleshooting, programming, and managing laboratory duties.*

***University of Delaware, Department of Psychology***

*March 1987 to August 1987*

*Programmer; Provided statistical analysis of cognitive science experimental data.*

***Veterans Administration Medical Center, Washington, DC***

*September 1986 to July 1988*

*Consultant; Worked on a contract for a large database application for managing Letters of Agreement.*

***University of Delaware, Academic Computing Services***

*August 1985 to May 1987*

*Consultant; Provided extensive consulting services across UNIX, VM/CMS, and other platforms.*

**AWARDS**

- NASA Software of the Year Award (*Runner up*), 1999.
- Smithsonian ComputerWorld/Museum of Natural History Award, for the In-flight Telemetry Project. April 3, 1998.
- North Oakland Medical Center Award for "In-flight Telemetry of Vitals Signs via the Internet". April 29, 1998.
- OHEP Award for "In-flight telemetry of Vitals Signs via the Internet". May 20, 1998.

- Contractor's Council Excellence Award for Biocomputation Center Project, NASA Ames Research Center, 1997.
- FDA Group Recognition Award for the 3D Reconstruction and Visualization Project, 1997.
- Sterling Software Excellence Award (Scientific Studies mission): 1995, 1996, 1997.

### **PROFESSIONAL AFFILIATIONS**

- Computer Assisted Radiology and Surgery (CARS) Program Committee
- Medicine Meets Virtual Reality (MMVR) Program Committee
- Medical Image Computing and Computer Assisted Intervention (MICCAI) Review Committee
- National Institutes of Health: Small Business Innovation Research (SBIR) Reviewer
- National Science Foundation (NSF) reviewer
- Co-moderator: VR News MedVR forum
- Association for Computing Machinery (ACM) SIGGRAPH
- SPIE- the Optical Engineering Society
- Society for Information Display (SID)

### **PLATFORMS**

Sun, SGI, HP, and Intel workstations, TMC Connection Machine 2 and 5, Cray X and Y-MP, Convex C2, Sequent multiprocessors and Intel-based personal and supercomputers.

### **OPERATING SYSTEMS**

Unix, Windows95/98/NT/CE, MacOS, and DOS operating systems.

### **LANGUAGES**

C++, C, HTML/VRML/Java, C\*, Pascal, Lisp, FORTRAN, Prolog, and various assembly languages.

### **NETWORKING**

WWW/HTTP, TCP/IP (IP, UDP, TCP, Sockets) and OSI (TP4, XDS, X.500, X.400, FTAM).

### **SOFTWARE PACKAGES/LIBRARIES**

OpenGL, Motif/X11; ImageVision, ViewKit, VideoLibrary; libTIFF, DICOM, MFC

### **PATENTS**

“A 3-D, Handheld Digital Camera for Medical Applications” (*3 patents pending*)

“Method and System for Remote Medical Communication and Diagnosis” (*patent issuing*)

### **PUBLICATIONS** (*Peer-reviewed: 65*)

Aschwanden, C; Burgess, L; Montgomery, K; “Performance Compared to Experience Level in a Virtual Reality Surgical Skills Trainer”, HCI (16) 2007: 394-399

Aschwanden C, Cornelius C, Burgess L, Montgomery K, Sharma A; “Centralized data recording for a distributed surgical skills trainer to facilitate automated proficiency evaluation.”, Stud Health Technol Inform. 2007;125:28-30.

Montgomery K, Burgess L, Dev P, Heinrichs L.; “Project Hydra--a new paradigm of internet-based surgical simulation”, Stud Health Technol Inform. 2006;119:399-403.

Aschwanden C, Sherstyuk A, Burgess L, Montgomery K.; “A surgical and fine-motor skills trainer for everyone? Touch and force-feedback in a virtual reality environment for surgical training.”, Stud Health Technol Inform. 2006;119:19-21.

Aschwanden, C; Burgess, L; Montgomery, K; “Performance Compared to Experience Level in a Virtual Reality Surgical Skills Trainer”, 12th International Conference on Human-Computer Interaction (HCI07), Beijing, China, July 22-27, 2007.

Daenzer, S; Montgomery, K; Dillman, R; Unterhinninghofen; "Real-Time Smoke and Bleeding Simulation in Virtual Surgery", Medicine Meets Virtual Reality (MMVR07), Long Beach, CA, February 6-9, 2007.

Aschwanden, C; Cornelius, C; Burgess, L; Montgomery, K; Burgess, L; Sharma, A; "Centralized Data Recording for a Distributed Surgical Skills Trainer to Facilitate Automated Proficiency Evaluation", Medicine Meets Virtual Reality (MMVR07), Long Beach, CA, February 6-9, 2007.

Montgomery, K; "Integrated Environmental Monitoring and Public Health in Vietnam", Med-e-Tel- the International Conference for eHealth, Telemedicine, and Health ICT, Luxexpo, Luxembourg, April 5-7, 2006.

Montgomery, K; Burgess, L; Dev, P; Heinrichs, L; "Project Hydra- A New Paradigm of Internet-Based Surgical Simulation", Medicine Meets Virtual Reality (MMVR06), Long Beach, CA, January 17-20, 2006.

Montgomery, K; "Integrated Environmental Monitoring and Public Health- A US-Vietnam Cooperative Project", US-Vietnam Workshop on Water Pollution Prevention Technologies (WWPT), Hanoi, Vietnam, November 15-18, 2005.

Montgomery, K; Whitmore, M; Sriram, MG; Sainath, S; "Crew Medical Interface System (CMIS): VR and Medicine Integrated for Medical Care on Long-Duration Spaceflight", Medicine Meets Virtual Reality (MMVR05), Long Beach, CA, January 23-26, 2005.

Montgomery, K; Herbranson, E; Brown, P; "A Haptically Enabled Dental Simulator", Medicine Meets Virtual Reality (MMVR05), Long Beach, CA, January 23-26, 2005.

Montgomery, K; Stephanides, M; Schendel, S; Ross, M; "User Interface Paradigms for Patient-Specific Surgical Planning: Lessons Learned over a Decade of Research", Journal of Computerized Medical Imaging and Graphics, Special Edition on Biomedical Imaging Informatics (Ed. HK Huang), 2004.

Mundt, C; Montgomery, K; Udoh, U; Barker, V; Thonier, G; Tellier, A; Ricks, R; Darling, B; Cagle, Y; Cabrol, N; Ruoss, S; Swain, J; Hines, J; Kovacs, G; "A Multi-Parameter, Wearable Physiological Monitoring System for Space and Terrestrial Applications", IEEE Transactions on Information Technology in BioMedicine, v9(3), September 2005, p 382-392.

Seifert A, Flynn MJ, Montgomery K, Brown P: Visualization of x-ray microtomography data for a human tooth atlas, SPIE Medical Imaging: Visualization, Image guided procedures, and display, Feb 2004, SPIE Proceedings Vol. 5367, 2004.

Brown, J; Latombe, JC; Montgomery, K; "Real-time Knot Tying Simulation". The Visual Computer, v20(3), pp. 165-179, 2003.

Montgomery, K; Mazzella, F; Lerman, B; Latombe, JC; "Design and Implementation of Wide-Area Networked Haptics", Medicine Meets Virtual Reality (MMVR04), Newport Beach, CA, January 23-26, 2004.

Montgomery, K; Mundt, C; Thonier, G; Tellier, A; Udoh, U; Kovacs, G; Barker, V; Ricks, R; Davies, P; Yost, B; Hines, J; "LifeGuard- a personal physiological monitor for extreme environments", Medicine Meets Virtual Reality (MMVR04), Newport Beach, CA, January 23-26, 2004.

Schendel, S; Montgomery, K; Sorokin, A; Lionetti, G; "A Surgical Simulator for Cleft Lip Planning and Repair", Journal of Craniomaxillofacial Surgery. (*in review*)

Dev, P; Montgomery, K; Senger, S; Heinrichs, WL; Srivastava, S; Waldron, K; "Simulated medical learning environments over the Internet". JAMIA, 2002.

Montgomery, K; Sorokin, A; Lionetti, G; Schendel, S; "Design and Evaluation of a Surgical Simulator for Cleft Lip Repair", International Society for Computer Aided Surgery, Computer Assisted Radiology and Surgery (CARS03), London, England, June 25, 2003.

Montgomery, K; Mazzella, F; Lerman, B; Latombe, JC; "Design and Implementation of Wide-Area Networked Haptics", International Workshop on Haptic Devices in Medical Applications, Computer Assisted Radiology and Surgery (CARS03), London, England, June 27, 2003.

Rao, A; Montgomery, K; Herbranson, E; Brown, P; "3D Interactive Atlas of Human Tooth Anatomy", Computer Assisted Radiology and Surgery (CARS03), London, England, June 27, 2003.

Montgomery, K; Bruyns, C "Virtual Instruments: A Generalized Implementation", Medicine Meets Virtual Reality (MMVR03), Newport Beach, CA, January 23-26, 2003.

Montgomery, K; Sorokin, A; Lionetti, G; Schendel, S; "A Surgical Simulator for Cleft Lip Repair", Medicine Meets Virtual Reality (MMVR03), Newport Beach, CA, January 23-26, 2003.

Bruyns, C; Senger, S; Menon, A; Montgomery, K; Wildermuth, S; and Boyle, R. "A Survey of Interactive Mesh Cutting Techniques and a New Method for Implementing Generalized Interactive Mesh Cutting Using Virtual Tools." Journal of Visualization and Computer Animation, v13, pp 21-42.

Dev, P; Heinrichs, WL; Srivastava, S; Montgomery, K; Senger, S; Temkin, B; Hasser, C; Latombe, JC; Heegaard, J; Youngblood, P; Friedman, CP; Waldron, K; "Simulated learning environments in anatomy and surgery delivered via the Next Generation Internet". *Medinfo*. 2002, v10(Pt 2):1014-8

Brown, J; Sorkin, S; Latombe, JC, Montgomery, K; Stephanides, M; "Algorithmic Tools for Real-Time Microsurgery Simulation", Medical Image Analysis, v6(3), September 2002.

Mazzella, F; Montgomery, K; Latombe, JC; "The Forcegrid; A Buffer Structure for Haptic Interaction with Virtual Elastic Objects", 2002 IEEE International Conference on Robotics and Automation, Washington DC, May 11-15, 2002.

Montgomery, K; Bruyns, C; Brown, J; Thonier, G; Mazzella, F; Wildermuth, S; Sorkin, S; Tellier, A; Lerman, B; Beedu, B; Latombe, JC, "Spring: A General Framework for Collaborative, Real-time Surgical Simulation", Medicine Meets Virtual Reality (MMVR02), Newport Beach, CA, January 23-26, 2002.

Thonier, G; Tellier, A; Montgomery, K; "An Internet-Based Framework For Streaming, Stereo Video and Multimedia Content For Use In Medical Education", Medicine Meets Virtual Reality (MMVR02), Newport Beach, CA, January 23-26, 2002.

Mundt, C; Hines, J; Ricks, B; Skidmore, M; Montgomery, K; Defouw, G; "Wireless Mobile Sensor System Monitors Vital Signs of Astronauts in Real Time", Medicine Meets Virtual Reality (MMVR02), Newport Beach, CA, January 23-26, 2002.

Bruyns, C; Montgomery, K; "Methods For Generalized Real-Time Interactions Between Rigid And Deformable Objects", Medicine Meets Virtual Reality (MMVR02), Newport Beach, CA, January 23-26, 2002.

Wildermuth S; Thonier G; Bruyns C; Montgomery K; "Virtual Reality Based Assistance For Interventional Radiology", Medicine Meets Virtual Reality (MMVR02), Newport Beach, CA, January 23-26, 2002.

Wildermuth, S; Bruyns, C; Montgomery, K; Beedu, B; Marincek, B; "Patient Specific Surgical Simulation System for Procedures in Colonoscopy", Vision, Modeling, and Visualization (VMV01), Stuttgart, Germany, November 21-23, 2001.

Bruyns, C; Wildermuth, S; Montgomery, K; "Active Edges: On Interacting in a Virtual Environment", Vision, Modeling, and Visualization (VMV01), Stuttgart, Germany, November 21-23, 2001.

Brown, J; Sorkin, S; Bruyns, C; Latombe, JC, Montgomery, K; Stephanides, M; "Real-Time Simulation of Deformable Objects: Tools and Application", Computer Animation 2001, Seoul, Korea, November 6-8, 2001.

Montgomery, K; Bruyns, C; Wildermuth, S; Hasser, C; Ozenne, S; Bailey, D; Heinrichs, L; "Surgical Simulator for Hysteroscopy: A Case Study of Visualization in Surgical Training", IEEE Visualization 2001, San Diego, California, October 21-26, 2001.

Bruyns, C; Montgomery, K; Wildermuth, S; "A Virtual Environment for Simulated Rat Dissection: A Case Study of Visualization for Astronaut Training", IEEE Visualization 2001, San Diego, California, October 21-26, 2001.

Bruyns, C; Senger, S; Montgomery, K; Wildermuth, S; "Real-Time Interactive Cutting Using Virtual Surgical Instruments", Medical Image Computing and Computer-Assisted Interventions (MICCAI 2001), Utrecht, The Netherlands, October 14-17, 2001.

Brown, J; Montgomery, K; Latombe, JC; Stephanides, M; "A Microsurgery Simulation System", Medical Image Computing and Computer-Assisted Interventions (MICCAI 2001), Utrecht, The Netherlands, October 14-17, 2001.

Wildermuth, S; Montgomery, K; Bruyns, C; Marincek, B; "Virtual Polypectomy", Medical Image Computing and Computer-Assisted Interventions (MICCAI 2001), Utrecht, The Netherlands, October 14-17, 2001.

Wildermuth, S; Bruyns, C; Montgomery, K; "Simulated Animal Dissection", Medical Image Computing and Computer-Assisted Interventions (MICCAI 2001), Utrecht, The Netherlands, October 14-17, 2001.

Montgomery, K; Heinrichs, L; Bruyns, C; Wildermuth, S; Hasser, C; Ozenne, S; Bailey, D; "Surgical Simulator for Operative Hysteroscopy and Endometrial Ablation", International Society for Computer-Aided Surgery (ISCAS), Computer-Aided Radiology and Surgery (CARS 2001), Berlin, Germany, June 27, 2001.

Montgomery, K; Mazzella, F; Stephanides, M; Schendel, S; "A High-Resolution Stereoscopic Computer Projection Display for Surgical Planning", Society for Information Display 2001 International Symposium Digest of Technical Papers, Vol. 32, pp. 359-361, June 2001.

Gandsas, A; Montgomery, K; Altrudi, R; "Wireless Vital Signs Telemetry to Hand-Held Computers", Medicine Meets Virtual Reality 2001 (MMVR01), IOS Press, Newport Beach, CA, January 24-27, 2001.

Heinrichs, WL; Srivastava, S; Pugh, C; Rakhlin, E; Montgomery, K; Pichumani, R; Rao, S; Dev, P; "Visual language to interface users of educational surgical simulators for fundamental surgical manipulations", in *Proc. 14th Annual Intl Computer-Assisted Radiol & Surgery (CARS)*, Ed. H-J.Lemke, Elsevier, Amsterdam, p29-34, 2000.

Montgomery, K; Stephanides, M; Schendel, S; "Development and application of a virtual environment for reconstructive surgery", Journal of Computer-Aided Surgery, v5(2), ISSN: 1092-9088, 2000, pp:90-97.

Heinrichs, WL; Srivastava, S; Brown, J; Latombe, JC; Montgomery, K; Temkin, B; Dev, P; "A Stereoscopic Palpable and Deformable Model: Lucy 2.5", Visible Human Project conference, Bethesda, Maryland, October 5, 2000.

Montgomery, K; Stephanides, M; Brown, J; Latombe, JC; Schendel, S; "A Virtual Environment for Training in Microsurgery", SPIE- The Optical Engineering Society, v3639(1), pp. 398-403, Jan 1999.

Montgomery, K; Stephanides, M; Schendel, S; Ross, M; "A Case Study Using the Virtual Environment for Reconstructive Surgery", IEEE Visualization, Research Triangle Park, NC, October, 1998

Altrudi R, Gandsas A, Montgomery K, Migliarini G., "Vital signs monitoring from an aircraft via the Internet", Prensa. Medica Argentina 1998, v85, pp. 76-79.

Ross, M; Montgomery, K; Linton, S; Cheng, R; Smith, J; "A National Center for Biocomputation: In Search of a Patient-Specific Interactive Virtual Surgery Workbench", Medicine Meets Virtual Reality (MMVR), IOS Press, 1998, pp. 323-328.

Ross, M; Smith, J; Montgomery, K; Cheng, R; Linton, S; "Fundamental Gravitational Research and Emerging Technologies: The Connection", Space Technology and Applications International Forum, American Institute of Physics Proceedings, Woodbury, New York, 1998, pp. 82-88.

Montgomery, K, Heyenga, G, "Gel Tomography for 3D Acquisition of Plant Root Systems", SPIE Electronic Imaging, Symposium on 3D Acquisition, San Jose, CA, January 1998, v3313(1), pp. 102-104.

Montgomery, K; Stephanides, M; Cheng, R; Schendel, S; Ross, M; "Clinical Application of VR for Surgery", SPIE Electronic Imaging, Engineering Reality of Virtual Reality, San Jose, CA, January 1998.

Montgomery, K, "VERS- A virtual environment for reconstructive surgery planning", Engineering Reality of Virtual Reality, SPIE Electronic Imaging, San Jose, CA, February 1997, v3012(1), pp. 487-492.

Ross MD, Montgomery K, Linton S; Cheng, R; "3-D reconstruction technologies for basic vestibular research and for medical applications.", Association for Research in Otolaryngology (ARO), February 1997.

Ross MD; Montgomery K; Cheng R; Linton S; "Three-dimensional (3-D) reconstruction, simulation and virtual environment visualization of gravity sensor circuitry", New Directions in Computational Morphology, MIT, July 13, 1996.

Montgomery, K; Ross, M; "Non-fiducial, shape-based registration of biological tissue". 3D Microscopy: Image Acquisition and Processing III, SPIE Electronic Imaging, San Jose, CA, February 1996, v2655(1), pp. 224-232.

Ross MD, Doshay D, Linton S, Parnas B, Montgomery K, Chimento T "New computer simulations of macular neural functioning", XVIIIth Barany Society Meeting, Uppsala, Sweden, June 5-8, 1994.

Ross M; Cheng, R; Doshay, D; Linton, S; Montgomery, K; Parnas, B; "High performance computing applications in neurobiological research", High Performance Computing '94 (Grand Challenges in Computer Simulation), April 1994.

Montgomery K; Ross, M; "Improvements in semiautomated serial-section reconstruction and visualization of neural tissue from TEM images", SPIE Electronic Imaging, 3D Microscopy conference proceedings, Feb 1994, v2184(1), pp. 264-267.

Ross M; Montgomery, K;. "Semiautomated 3-D reconstruction of neural architectures from serial sections viewed in a transmission electron microscope: Recon 1.0". Computational NeuroScience 1993. July 1993.

Ross, M; Doshay, D; Montgomery, K; Chimento, T; "From transmission electron micrographs to semiautomated 3-D reconstruction and computer simulation of calyceal functioning", Association for Research in Otolaryngology (ARO), February, 1993.

Montgomery, K; Ross. M; "A method for semiautomated serial section reconstruction and visualization of neural tissue from TEM images." SPIE Electronic Imaging, Biomedical Image Processing Conference Proceedings, Feb 1993, v1905(1), pp. 114-120.

#### **PUBLICATIONS** (*Non-peer-reviewed*)

Montgomery, K, "Automated Reconstruction of Neural Elements from Transmission Electron Microscope Images". Dissertation, University of California, Santa Cruz, CA, March 1996.

Montgomery, K, "Advances in three dimensional serial section reconstruction and visualization of neural tissue from transmission electron microscopy", Masters Thesis, University of California, Santa Cruz, CA, 1994.

#### **BOOKS**

#### **BOOK CHAPTERS**

#### **BOOK REVIEWS**

#### **ABSTRACTS**

Schendel, S; Montgomery, K; Sorokin, A; Lionetti, G; "A Surgical Simulator for Cleft Lip Planning and Repair", American Society of Maxillofacial Surgeons, San Diego, CA, October 25, 2003.

Schendel, S; Montgomery, K; Sorokin, A; Lionetti, G; "A Surgical Simulator for Cleft Lip Planning and Repair", International Society of Craniofacial Surgery, Monterey, CA, September 25, 2003.

Gandsas, A; Montgomery, K; Altrudi, R; McKenas, D; "In-Flight continuous vital sign telemetry via the Internet", Journal of Aviation, Space, and Environmental Medicine, v71(1), January 2000.

Gandsas A, Montgomery K, Altrudi R, McKenas D. and Silva, Y. "Vital signs monitoring from an aircraft via the Internet.", Abstract Book. 1997; CSRP 468 ISSN 3162:59.

#### **PRESENTATIONS**

Montgomery, K; "Computer Simulation Science Update: Who, Where, What, How, and Why", Advanced technology Applications for Combat Casualty Care (ATACCC02), St Petersburg, Florida, September 10, 2002. (*invited, keynote*)

Montgomery, K; "Spring: A Patient-Specific, Real-Time Surgical Simulator With Soft-Tissue Modeling And Multi-User, Multi-Instrument, Networked Haptics", Advanced technology Applications for Combat Casualty Care (ATACCC02), St Petersburg, Florida, September 10, 2002. (*invited*)

Montgomery, K; "Smart Healthcare Monitoring System: A Wearable, Wireless, Internet-based System for Real-time Physiological and Environmental Monitoring", Advanced technology Applications for Combat Casualty Care (ATACCC02), St Petersburg, Florida, September 10, 2002. *(invited)*

Montgomery, K; "Computer-Based Surgical Simulation and Application for Spinal Surgery", Computer-Assisted Radiology and Surgery (CARS02), Paris, France, June 28, 2002. *(invited)*

Montgomery, K; "The Generalized Implementation of Virtual Instruments for Surgical Simulation", Computer-Assisted Radiology and Surgery (CARS02), Paris, France, June 26, 2002.

Montgomery, K; "Advanced Technologies for Next Generation Medicine", University of Hawaii, Manoa, Hawaii, April 18, 2001. *(invited)*

Montgomery, K; "Advanced Technologies for Next Generation Medicine", CIMIT Forum, Massachusetts General Hospital/MIT, Boston, Massachusetts, February 5, 2001. *(invited)*

Montgomery, K; "New Frontiers in Surgery: The Technological Revolution", American Academy of Minimally Invasive Spinal Surgery, Las Vegas, Nevada, December 18, 2001. *(invited, keynote)*

Montgomery, K; "Internet Strategies for Surgical Training", American Association of Gynecological Laparoscopists (AAGL), San Francisco, CA, November 18, 2001. *(invited)*

Montgomery, K; et al, "A Patient-Specific, Real-time Surgical Simulation System with Soft-Tissue Modeling and Multi-User, Multi-Instrument, Networked Haptics", Stanford Workshop on Surgical Simulation (SWSS), Stanford, CA, June 21, 2001.

Montgomery, K; Bruyns, C; Wildermuth, S; Girod, S; Schendel, S; "3D Distraction Planning and Prediction of Soft-Tissue Changes in Pfeiffer's Syndrome- A Case Report", Distraction 2001, Paris, France, June 14, 2001.

Montgomery, K; Brown, J; Bruyns, C; Latombe, JC; Heinrichs, L; Srinivasa, S; Dev, P; Schendel, S; "On Implementing Fundamental Manipulations in Surgical Simulators", Medicine Meets Virtual Reality 2001, Newport Beach, CA, January 24-27, 2001.

Bruyns, C; Montgomery, K; Wildermuth, S; "Advanced Astronaut Training/Simulation System for Rat Dissection", Medicine Meets Virtual Reality 2001, Newport Beach, CA, January 24-27, 2001.

Gandsas, A; Montgomery, K; Altrudi, R; "Wireless Vital Signs Telemetry to Hand-Held Computers", Medicine Meets Virtual Reality 2001, Newport Beach, CA, January 24-27, 2001.

Montgomery, K; Basdogan, C; Kuehnappel, U; Rosen, J; "Simulating Minimally Invasive Surgical Procedures in Virtual Environments: Modeling", Medicine Meets Virtual Reality 2001, Newport Beach, CA, January 24-27, 2001. *(invited)*

Montgomery, K; Stephanides, M; Schendel, S; "Virtual Reality-Based Surgical Training for Long Duration Space Missions", Medicine Meets Virtual Reality 2001, Newport Beach, CA, January 24-27, 2001.

Montgomery, K; Stephanides, M; Schendel, S; "New Methods of Simulation: Surgical Simulation Technologies", International Meeting on Medical Simulation, Society for Technology in Anesthesia (STA), Scottsdale, AZ, January 12-14, 2001. *(invited)*

Montgomery, K; Stephanides, M; Schendel, S; "Future of Medicine and Dentistry: Advanced Technology and its Application", California International Medical/Dental Conference (CAIMED), SnowBird, UT, December 7-8, 2000. *(invited, keynote)*

Montgomery, K; Stephanides, M; Schendel, S; "Virtual Reality Surgical Assistance for Long Duration Space Missions", SmartSystems2000, NASA Johnson Space Center, Sept 8, 2000.

Bruyns, C; Montgomery, K; Wildermuth, S; "A Semi-Immersive Virtual Environment for Simulated Rat Dissection", SmartSystems2000, NASA Johnson Space Center, Sept 6, 2000.

Montgomery, K; Lerman, B; Stephanides, M; Schendel, S; "Haptic Devices in Medical Applications", 2<sup>nd</sup> International Workshop on Haptic Devices in Medical Applications, Computer Assisted Radiology and Surgery (CARS), July 1, 2000. *(invited, keynote)*

Montgomery, K; Stephanides, M; Schendel, S; "Advanced Visualization and Simulation in Surgical Planning", Computer-Aided Radiology and Surgery (CARS) @ Stanford, Stanford, CA, June 28, 2000.

Stephanides, M; Montgomery, K; Brown, J; Latombe, JC; Schendel, S; "Virtual Reality-Based Surgical Training for Long Duration Space Missions", 13<sup>th</sup> IAA Humans in Space Symposium, Santorini, Greece, May 25, 2000.

Brown, J; Latombe, JC; Montgomery, K; Stephanides, M; Schendel, S; "Soft-Tissue Modeling for Surgical Simulation", Stanford Computer Forum, May 2000.

Montgomery, K; Stephanides, M; Schendel, S; "National Biocomputation Center: Virtual Reality, Real Patients", Stanford Computer Forum, Stanford, CA, March 15, 2000. *(invited)*

Montgomery, K; Stephanides, M; Schendel, S; "An Augmented Reality Environment for IntraOperative Assistance", Medicine Meets Virtual Reality, Newport Beach, CA, January 28, 2000.

Stephanides, M; Montgomery, K; Schendel, S; "Applied Virtual Reality for Surgical Training, Planning, and Analysis", American Society for Plastic and Reconstructive Surgery (ASPRS), New Orleans, Louisiana, October 1999. *(invited)*

Stephanides, M; Montgomery, K; Schendel, S; "Virtual Reality in Surgical Planning and Training", International Confederation of Plastic and Reconstructive and Aesthetic Surgery (IPRAS), San Francisco, California, June 1999. *(invited)*

Montgomery, K; "National Biocomputation Center", Java Technical Steering Committee, Sun Microsystems, Menlo Park, California, November 17, 1999. *(invited)*

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Montgomery, K; "Segmentation Techniques for Automated 3D Reconstruction of Biomedical Data", Dept of Radiation Oncology, Stanford University, September 17, 1999.

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