GREGORY FRANCIS WELCH
Curriculum Vitae—October 17, 2014

CONTACT INFORMATION

University *of* Central Florida

College of Nursing	Computer Science, EECS	Institute for Simulation and Training
432 & 612 University Towers	441 Harris Engineering Center	110 Partnership III
12201 Research Parkway	4000 Central Florida Boulevard	3100 Technology Parkway
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PROFESSIONAL EXPERIENCE (SUMMARY)

2011–present — **University *of* Central Florida**
Florida Hospital Endowed Chair in Healthcare Simulation (2013)
Professor, College of Nursing (2013)
Professor, Computer Science, EECS
Professor, Institute for Simulation & Training (IST)
Co-Director, IST Synthetic Reality Lab (SREAL)

1996–present — **University *of* North Carolina *at* Chapel Hill**
Adjunct Professor, Computer Science (2012–present)
Research Professor (Assistant, Associate), Computer Science (1996–2012)

2011–present — **University College Dublin**
Visiting Professor, School of Information and Library Studies

2010–present — **Keio University**
Visiting Professor, Graduate School of Media Design

1990–1992 — **Northrop Defense Systems Division**
Senior Engineer, Airborne Electronic Countermeasures, Digital Systems Group

1987–1990 — **NASA Jet Propulsion Laboratory (California Institute of Technology)**
Voyager Spacecraft Project, Flight Command and Data Management Section

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EDUCATION

May 1997 — **Ph.D., Computer Science**
University *of* North Carolina *at* Chapel Hill, Chapel Hill, NC
Under the direction of Gary Bishop

May 1995 — **M.S., Computer Science**
University *of* North Carolina *at* Chapel Hill, Chapel Hill, NC

May 1986 — **B.S. with *Highest Distinction*, Electrical Technology**
Purdue University, West Lafayette, IN

ACTIVITIES AND HONORS

- Keynote speaker, 22nd Annual Research Day, Sigma Theta Tau International Honor Society of Nursing, Theta Epsilon chapter, Winter Park, Florida, USA, April 8, 2014.
- IEEE Computer Society award for "Outstanding Performance as Co-Chairman of the IEEE VR 2014 Conference," April 3, 2014.
- Keynote speaker, Society for Computer Science 2013 Workshop on Virtual Reality-Augmented Reality (GI VR-AR 2013), Würzburg, Germany, September 19, 2013.
- IEEE Computer Society award for "Outstanding Performance as Co-Chairman of the IEEE VR 2013 Conference," March 18, 2013.
- Invited speaker/participant, National Research Council (NRC) Mapping Science Committee meeting, October 3, 2012, National Academies Keck Center, Washington, DC, USA.
- Invited speaker/participant, Computing Community Consortium (CCC) Visioning Workshop on Spatial Computing, September 10–11, 2012, National Academies Keck Center, Washington, DC, USA.
- Keynote speaker, ISUVR 2012 (International Symposium on Ubiquitous Virtual Reality), Daejeon, South Korea, August 23, 2012.
- Awarded 2nd *Prize Best ICDSC 2011 Paper* at 5th ACM/IEEE International Conference on Distributed Smart Cameras, August 22–25, 2011.
- Undergraduate advisee Joshua Morton awarded a Rodney F. Hood Undergraduate Research Award in support of his work on "Tremor Sensing and Quantification" (November 15, 2010– June 30, 2011).
- Keynote speaker, JVRC 2010 (Joint Virtual Reality Conference), Fellbach, Germany, September 29, 2010.
- Keynote speaker, WARM 2010 (5th Winter Augmented Reality Meeting), Graz, Austria, February 24–25, 2010.
- Featured exhibit, Collaborations: Humanities, Arts & Technology (CHAT) Festival, "The Bathysphere: Motion Capture as Art," with Prof. Francesca Talenti, February 16–20, 2010, UNC-Chapel Hill.
- Keynote speaker, RAVE 2009 (Real Action, Virtual Environments), Barcelona, Spain, March 4, 2009
- Keynote speaker, D2D 2008 (Digital City Monitoring and Emergency Management), Shenzhen, China, October 25, 2008
- Keynote speaker, 14th Eurographics Symposium on Virtual Environments (EGVE 2008), Eindhoven, The Netherlands, May 29, 2008
- *Excellence in Teaching* award, UNC-Chapel Hill, Computer Science Student Association, for 3D Computer Modeling and Animation, Spring 2007
- *Best Paper*, ACM Symposium on Virtual Reality Software and Technology 1999 (VRST 99)
- Internationally-recognized Kalman filter web site (`http://www.cs.unc.edu/~welch/kalman/`)
- Boards and Committees
    - Steering Committee, International Symposium for Mixed & Augmented Reality (ISMAR)
    - Advisory Committee, IST Modeling & Simulation Graduate Program
    - Information Technology Resource Advisory Committee, UCF
    - Senior Advisor, TrakMark Working Group—SIG MR and VR Society of Japan (past)
    - Board of Directors, HiBall Tracker, Inc. (past)
    - UNC-Chapel Hill Committee on Student Conduct (past)

- – UNC-Chapel Hill Computer Science Committee on Curriculum and Planning (past)
- – UNC-Chapel Hill Computer Science Committee on Publications (past)

- Reviewer, Committee, and Editorial Activity

  - – Associate Editor of Presence: Teleoperators and Virtual Environments
  - – Associate Editor of Frontiers in Virtual Environments
  - – Editorial Board of Journal of Virtual Reality
  - – ACM: International Conference on Graphics and Interactive Techniques (SIGGRAPH); Symposium on Virtual Reality Software and Technology (VRST); Symposium on Interactive 3D Graphics; Multimedia; User Interface Software and Technology (UIST); Transactions on Mathematical Software;
  - – IEEE: Computer Graphics and Applications (CG&A); International Symposium on Mixed and Augmented Reality (ISMAR)—Area Chair; Virtual Reality (VR); Transactions on Vizualization and Computer Graphics; Transactions on Aerospace and Electronic Systems; Conference on Computer Vision and Pattern Recognition (CVPR)
  - – International Symposium on 3D Data Processing, Visualization, and Transmission (3DPVT)
  - – IEEE/ACM International Symposium on Wearable Computers
  - – EURASIP Journal of Applied Signal Processing; Transactions on Automatic Control
  - – Journal of Optimal Control Applications and Methods
  - – Eurographics Workshop on Virtual Environments
  - – New Immersive Displays for the Near Future (Laval Virtual 2011 Symposium)

- Professional Associations

  - – Association for Computing Machinery (ACM)
  - – Institute of Electrical and Electronics Engineers (IEEE) Computer Society
  - – Society for Simulation in Healthcare (SSIH)
  - – International Nursing Association of Clinical Simulation and Learning (INACSL)
  - – Southern Nursing Research Society (SNRS)

- Developer of popular Mac OS X Mail plugins MailFollowUp and MailRecent
- Consultant on Virtual Reality, human position and motion estimation, and sensor fusion

- Event Organization

  - – Dagstuhl Seminar on "Virtual Realities" (Seminar 13241), co-organized with Guido Brunnett (TU Chemnitz, Germany), Sabine Coquillart (INRIA Rhône-Alpes, France), and Robert van Liere (Center for Mathematics and Computer Science, Netherlands), June 10–14, 2012, The International Conference and Research Center for Computer Science, Dagstuhl, Germany.
  - – IEEE Virtual Reality 2013 (VR 2013), Co-General Chair with Ben Lok (University of Florida), March 16–23, 2013, Orlando, FL, USA.
  - – 11th International Symposium on Mixed and Augmented Reality (ISMAR 2012), Co-General Chair with Blair MacIntyre (Georgia Tech), November 5–8, 2012, Atlanta, Georgia, USA.
  - – Joint Virtual Reality Conference 2011 (JVRC 2011), International Program Committee Co-chair with Sabine Coquillart (INRIA Rhône-Alpes, France) and Anthony Steed (University College of London, UK).
  - – 10th International Symposium on Mixed and Augmented Reality (ISMAR 2011), Program Committee Co-Chair with Gerhard Reitmayr (Graz University of Technology) and Jun Park (Hongik University).

- VR 2011 Research Demos Co-Chair, IEEE Virtual Reality 2011 (Singapore), with Dirk Reiners (University of Louisiana at Lafayette, USA), Henry Duh (National University of Singapore), and Jiung-Yao Huang (National Taipei University, Taiwan).
- VR 2010 Research Demos Co-Chair, IEEE Virtual Reality 2010 (Waltham, MA, USA), with Yoshifumi Kitamura (Osaka University, Japan), Laura Monroe (Los Alamos National Laboratories, USA), Dirk Reiners (University of Louisiana at Lafayette, USA), and Simon Richir (Laval Virtual, France)
- Dagstuhl Seminar on "Virtual Realities" (Seminar 08231), co-organized with Guido Brunnett (TU Chemnitz, Germany) and Sabine Coquillart (INRIA Rhône-Alpes, France), June 1–6, 2008, The International Conference and Research Center for Computer Science, Dagstuhl, Germany
- VR 2007 Local Arrangements Co-Chair, IEEE Virtual Reality 2007 (Charlotte, NC, USA), with Zachary Wartell (UNC-Charlotte, USA), Sabarish Babu (UNC-Charlotte, USA), and Regis Kopper (Virginia Tech, USA)
- Workshops/Tutorials Chair, 5th IEEE and ACM International Symposium on Mixed and Augmented Reality (Santa Barbara, CA, USA)
- Co-Chair with Chris Jaynes (University of Kentucky) of IEEE CVPR 2006 International Workshop on Projector-Camera Systems, (ProCams 2006), New York, NY, USA.
- 3DPVT 2006 Organizing Committee, Third International Symposium on 3D Data Processing, Visualization and Transmission (Chapel Hill, NC, USA)
- EDT 2006 Co-chair, IEEE Virtual Reality 2006 International Workshop on Emerging Display Technologies (Alexandria, VA, USA), with Mark Bolas (USC and Fakespace Labs) and Andreas Simon (FH-Aargau)
- ICAT 2005 Program Co-Chair, 15th International Conference on Artificial Reality and Telexistence (Christchurch, New Zealand), with Sang Chul Ahn (KIST, Korea), and Haruo Noma (ATR, Japan)
- ProCams 2005 Posters Chair, IEEE CVPR 2005 International Workshop on Projector-Camera Systems (San Diego, CA, USA)
- EDT 2005 Co-chair, IEEE Virtual Reality 2005 International Workshop on Emerging Display Technologies (Bonn, Germany), with Mark Bolas (USC and Fakespace Labs) and Andreas Simon (Fraunhofer IMK)
- I3D 2001 Registration Chair, ACM Symposium on Interactive 3D Graphics (Chapel Hill, NC, USA)

- Panel Participation

  - **Greg Welch** (UCF), Charles Hughes (UCF), Linda Gibson-Young (UCF), Chait Renduchintala (UCF), Peter Kincaid (UCF), Sarah Matthews (FL DOH), Tom Herring (FL DOH), "Technology & Public Health Use Now and in the Future," 2014 Florida Public Health Educational Meeting, Orlando, FL, August 1, 2014.
  - Betty Mohler (Max Planck Institute for Biological Cybernetics), **Greg Welch** (UNC-CH), Daniel Thalmann (Nanyang Technological University and EPFL), and Victoria Interrante (University of Minnesota), "Avatars in Virtual Environments," IEEE Virtual Reality 2011 (VR 2011), Singapore, March 21, 2011.
  - Randy Harrell (CISCO), Jaron Lanier (Microsoft), Frantz Lohier (Logitech), **Greg Welch** (UNC-CH), William C. Wickes (Hewlett Packard), and Zhengyou Zhang (Microsoft Research), IMMERSCOM 2009 (2nd International Conference on Immersive Telecommunications), May 29, 2009.
  - Henry Fuchs, Bernd Fröhlich (Bauhaus-Universität Weimar), and **Greg Welch**, "Display Technology," 14th Eurographics Symposium on Virtual Environments (EGVE 2008),

Eindhoven, The Netherlands, May 30, 2008.

– Barbara Hayes-Roth, Austin Henderson, Ramesh Jain, Lev Manovich, **Greg Welch**, and Gopal Pingali, "Experiential Telepresence: How Can Telepresence Research be Guided Towards Better End User Experience?" ACM SIGMM 2003 Workshop on Experiential Telepresence 2003 (ETP 2003), November 7, 2003, Berkeley, CA USA.

- Student Activities

  – President, UNC-Chapel Hill Computer Science Student Association, 1994–1995
  – Graduated with *Highest Distinction* from Purdue University (among three-tenths of the baccalaureate graduates having the highest graduation indexes)
  – *Outstanding Senior Design Project*, "The Easy Chair: A Microprocessor-Controlled Wheelchair for Children With Muscular Disorders," E.T., Purdue University, 1986
  – *Distinguished Student*, Purdue University, 1982–1986 (all semesters)
  – Residence Hall Counselor, Purdue University, 1985–1986
  – Tau Alpha Pi National Honor Society, Pi Alpha Chapter, 1986
  – Golden Key National Honor Society, 1984
  – Phi Eta Sigma National Honor Society, 1983

INVITED TALKS (SELECTED)

- "Making the Virtual Real: Physical Manifestations of Dynamic Virtual People, Objects, and Places," invited speaker at Qualcomm/Vienna University of Technology (Vienna Austria) and keynote speaker at the Graz University of Technology (Graz, Austria), September 15 & 17, 2014.
- "Past and Current Research in Modeling and Reproducing Humans for Warfighter Training," invited speaker, Central Florida Vets meeting, Orlando VA Medical Center (Orlando, FL), August 26, 2014.
- "Patient Simulation for Nursing Education and Hospital/Clinic Training," Keynote talk for 22nd Annual Research Day, Sigma Theta Tau International Honor Society of Nursing, Theta Epsilon chapter, Winter Park, Florida, USA, April 8, 2014.
- "Making the Virtual Real: Physical Manifestations of Dynamic Virtual People, Objects, and Places," Harris Corporation, Melbourne, FL, February 18, 2014.
- "Face-to-Face: Interactive Simulation Using a Mobile Physical-Virtual Patient," work with Steven Talbert, Mary Lou Sole, and Karen J. Aroian, SNRS 28th Annual Conference, San Antonio, TX, February 15, 2014.
- "Physical-Virtual Humans for Healthcare," the University of Texas at San Antonio, San Antonio, TX, February 13, 2014.
- "Physical-Virtual Humans for Training and Teleportation," Bonn-Rhein-Sieg University of Applied Sciences, Bonn, Germany, September 20, 2013.
- "Physical-Virtual Humans for Training and Teleportation," Max Planck Institute, Tübingen, Germany, September 17, 2013.
- "Interactive Shader Lamps: Projector-Based Graphics in Motion," GI VR-AR (Würzburg, Germany), September 19, 2013.
- "Physical-Virtual Humans for Training and Teleportation," TU Chemnitz (Chemnitz, Germany), June 6, 2013.
- "Physical-Virtual Humans: Challenges and Opportunities", KIST (Seoul, South Korea) and KAIST (ISUVR 2012, Daejeon, South Korea), August 22–23, 2012.

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