

Thursday, October 17, 2002

(All presentations take place in Sitterson Hall, Lecture Room 014)

8:00 a.m. - 8:30 a.m.: INTRODUCTION

Opening by Ming Lin & Dinesh Manocha (UNC-CH)

Welcome by ARO Program Manager, Dr. Michael Coyle (ARO);
Chair of Computer Science Department, Prof. Steve Weiss (UNC-CH); and
Vice Provost of Research, Dr. Tony Waldrop (UNC-CH).

9:00 a.m. - 10:10 a.m.: VR & IMMERSIVE TECHNOLOGIES (Chair: D. Manocha)

9:00 a.m. - 9:45 a.m.

What we've learned about Presence in Virtual Environments
by *Fred Brooks* (UNC)

9:45 a.m. - 10:10 p.m.

Locomotion Interfaces for Virtual Environments
by *John Hollerbach* (UTAH)

10:10 a.m. - 10:40 a.m.: BREAK

Poster Presentations & Live Demonstrations

10:40 a.m. - 11:55 a.m.: ACQUISITION OF REAL-WORLD (Chair: M. Swinson)

10:40 a.m. - 11:05 a.m.

View-Registration for 3-D Model Generation from Sensor Data
by *Martial Hebert* (CMU)

11:05 a.m. - 11:30 a.m.

HARMONIC COMPUTATIONAL GEOMETRY: the geometry of visual space-time
by *Yiannis Aloimonos* (UMD)

11:30 a.m. - 11:55 a.m.

Tele-Immersion for Advanced Surgical Training and for Assistance
During Surgical Procedures
by *Henry Fuchs* (UNC-CH)

12:00 a.m. - 1:30 p.m.: LUNCHEON

(Sitterson Hall Lower Areas & Carolina Inn North Parlor)

1:30 p.m. – 2:45 p.m.: ROBOTICS AND CONTROL (Chair: J. Hodgins)

1:30 p.m. – 1:55 p.m.

Programming Machines That Work
by *Dan Koditschek* (UMICH)

1:55 p.m. – 2:20 p.m.

Control and Coordination for a Network of Ground and Aerial Robots
by *Vijay Kumar* (UPENN)

2:20 p.m. – 2:45 p.m.

Moving by Thinking: Progress towards a Cortical Neural Prosthetic
by *Joel Burdick* (CALTECH)

2:45 p.m. – 3:15 p.m.: BREAK

Poster Presentations & Live Demonstrations

3:15 p.m. – 4:15 p.m.: Federal Interests in VR & Robotics (Chair: A. Lastra)

Panel members are *John Grills* (RDECOM), *Kevin Lyons* (NIST), *Angus Rupert* (NAMRL), and *Paul Tanenbaum* (ARL).

4:15 p.m. - 5:30 p.m.: MODELING & SIMULATION (Chair: D. Pai)

4:15 p.m. – 4:40 p.m.

Representing and Parameterizing Embodied Agent Behaviors
by *Norman Badler* (UPENN)

4:40 p.m. – 5:05 p.m.

Digital Geometry Processing
by *Peter Schroder* (CALTECH)

5:05 p.m. – 5:30 p.m.

Engineering Design and Virtual Environments
by *Elaine Cohen* (UTAH)

5:45 p.m. - 9:00 p.m.: DINNER RECEPTION & UNC RESEARCH DEMO
(*Sitterson Hall Lower & Upper Lobby Areas, and Graphics Lab on the 2nd Floor*)

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8:30 a.m. - 10:05 a.m.: COMPLEX SYSTEMS (Chair: D. Manocha)

8:30 a.m. - 9:15 a.m.

Control of Networks of Unmanned Vehicles
by *Shankar Sastry* (BERKELEY)

9:15 a.m. - 9:40 a.m.

Mobile Augmented Reality Systems
by *Steve Feiner* (COLUMBIA)

9:40 a.m. - 10:05 a.m.

Building Robust Systems out of Non-Robust Components
by *Pradeep Khosla* (CMU)

10:05 a.m. - 10:35 a.m.: BREAK

Poster Presentations & Live Demonstrations

10:35 a.m. – 11:00 a.m.: SPECIAL PRESENTATION (Introduction: M. Lin)

Army Research Office: Basic Research for Army Transformation
by *Jim Chang* (ARO/ARL)

11:00 a.m. - 12:15 p.m.: MAN/MACHINE INTERACTION (Chair: J. Trinkle)

11:00 a.m. – 11:25 a.m.

Human-Robot Cooperation in Surgery
by *Ken Salisbury* (STANFORD)

11:25 a.m. – 11:50 a.m.

Interactive Display of Complex Environments
by *Dinesh Manocha* (UNC-CH)

11:50 a.m. – 12:15 a.m.

Finger Sculpting with Digital Clay
by *Jarek Rossignac* (GATECH)

12:15 p.m. – 1:45 p.m.: LUNCHEON

(Sitterson Hall Lower Lobby Area & Carolina Inn North Parlor)

1:45 p.m. – 3:00 p.m.: FUNDING PROGRAMS FOR ROBOTICS (Chair: M. Lin)

Panel members are *David Hislop* (ARO), *Michael Pazzani* (NSF), *Dylan Schmorrow* (DARPA/ONR), and *Wesley Snyder* (ARO).

3:00 p.m. – 3:30 p.m.: BREAK

Poster Presentations & Live Demonstrations

3:30 p.m. – 4:30 p.m.: FUNDING PROGRAMS FOR INFORMATION TECHNOLOGIES (Chair: H. Fuchs)

Panel members are *Kamal Abdali* (NSF), *Robert Launer* (ARO), *Ward Page* (DARPA), and *Larry Rosenblum* (ONR/NRL).

4:30 p.m. – 5:30 p.m.: FEDERAL RESEARCH INTERESTS ON VR & ROBOTICS (Chair: Howie Choset)

Panel members are *Grace Bechenek* (TECOM), *Phil Emmermann* (ARL), and *Jim Templeman* (NRL).

5:30 p.m. - 7:30 p.m.: HORS D'OEUVRE RECEPTION

Poster Presentations & Live Demonstrations
(*Sitterson Hall Lower & Upper Lobby Areas*)

Saturday, October 19, 2002

(All presentations take place in Sitterson Hall, Lecture Room 014)

8:30 a.m. - 10:05 a.m.: SERVICE TO DOD & SOCIETY (Chair: M. Lin)

8:30 a.m. -9:15 a.m.

Information Technology in Service to Society: Opportunities and Challenges
by *Ruzena Bajczyk* (BERKELEY)

9:15 a.m. – 9:40 a.m.

Two Perspectives on Human-Centered Robotics
by *Ronald Arkin* (GATECH)

9:40 a.m. – 10:05a.m.

The MOVES Institute – from science fiction to your door
by *Mike Zyda* (NPS)

10:05 a.m. – 10:35 a.m.: BREAK

Poster Presentations & Live Demonstrations

10:35 a.m. – 11:45 a.m.: FUNDING PROGRAMS FOR VE, GEOMETRIC COMPUTING, GRAPHICS & HCI (Chair: D. Manocha)

Panel members are *Mike Coyle* (ARO), *Michael Macedonia* (STRICOM),
Astrid Schmidt-Nielsen (ONR), and *John Staudhammer* (NSF).

12:00 p.m. - 2:00 p.m.: LUNCHEON

Poster Presentations & Live Demonstrations
(Sitterson Hall Lower & Upper Lobby Areas)

Contributed Poster Presentations & Live Demonstrations

Virtual Environments & Computer Graphics

During Breaks & Lunch on Thursday, October 17, 2002

5:30pm - 7:30pm on Friday, October 18, 2002

During AM Break & Lunch on Saturday, October 19, 2002

Point-and-Shoot Model Acquisition

V. Popescu and E. Sacks

Creation of Augmented Virtual Environments by Dynamic Fusion of Imagery and 3D Models

S. You, U. Neumann, J. Hu, B. Jiang, and J. Lee

Multisensory Human Experience: Measurement, Synthesis, and Interaction

D. K. Pai

Battlefield Information Integration and Visualization for Command (BIIVC)

P. Tinker and R. Azuma

COTS Multiscreen Displays

J. Jacobson, M. Lewis, and K. Sycara

Virtually Reality Collaborative Re-Design Environment

S. McMains, C. Sequin, and P. K. Wright

Directing Attention in Virtual Environments

S. Hughes, M. Lewis, and K. Sycara

Interactive Control of Avatars Animated with Human Motion Data

J. Lee, J. Chai, P. S. A. Reitsma, J. K. Hodgins, and N. S. Pollard

Mix-and-Match Motion: Animated Virtual Experiences

M. Gleicher and the UW Graphics Group

Building Multiagent Behaviors from Observation

D. C. Brogan and Y. C. Loitiere

Simulation Culling and Level-of-Detail

S. Chenny

Modelling Man Made Environments: Geometric and Appearance Based Techniques

J. Kosecka

Haptic Guidance for Training Complex Skills in a Virtual Environment

F. Tendick

Intelligent Systems & Human Augmentation

*During Breaks & Lunch on Friday, October 18, 2002
5:30pm - 7:30pm on Friday, October 18, 2002 and
During AM Break & Lunch on Saturday, October 19, 2002*

Human Augmentation for Search and Rescue

V. Kumar, D. Rus, and S. Singh

An Integrated Approach to Dexterity Enhancement in Human-Machine Collaborative Systems

G. D. Hager, A. M. Okamura, and R. H. Taylor

Human-Robot Interaction

J. E. Colgate, K. M. Lynch, and M. A. Peshkin

Human-Robot Interaction Through a Distributed Virtual Environment

*A. H. Fagg, S. Ou, T. R. Hedges, M. Brewer, M. Piantesdosi, P. Amstutz, A. Hanson,
Z. Zhu, R. Grupen, and E. Riseman*

Self-replicating Robots for Monitoring and Surveillance

Z. Butler and D. Rus

On Accurate Modeling of Contact States in Real Time

J. Xiao

GraspIt!: A Versatile Dynamic Simulator for Robotic Grasping

A. T. Miller and P. K. Allen

Multibody Dynamics with Friction: Time-Stepping and Applications

J.C. Trinkle

Six-Degree-of-Freedom Haptic Interaction Using Incremental and Localized Computations

Y. J. Kim, M. A. Otaduy, M. C. Lin, and D. Manocha

Software Systems for Vision-Based Spatial Interaction

J. Corso, G. Ye, D. Burschka, and G. D. Hager

Real-Time Generation of Fast Trajectories for Highly Maneuverable Underactuated Mechanical Systems

K. M. Lynch

User-Centric Optimal Planning for Robots in Non-trivial Terrains

H. Choset

Constraint-Based Motion Planning

M. Garber and M. C. Lin

Path Planning for Spatial Closed Kinematic Chains with Spherical Joints

J. C. Trinkle and R. J. Milgram

Motion Planning for Humanoid Robots

J. Kuffner