

**PRESENCE 2008**

**Proceedings of the 11th Annual International Workshop on Presence  
Padova, 16-18 October 2008**

Printed by  
CLEUP Cooperativa Libreria Universitaria Padova  
Padova 2008

Edited by Anna Spagnolli, Luciano Gamberini

ISBN: 978-88-6129-287-1

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## Virtual Worlds: Projecting Human Presence into Cyberspace, Streetspace, Biospace, and Outerspace

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The rise of the digital age in the second half of the 20th Century birthed a new medium for the 21st: the virtual world. Human presence in digital spaces began as a single spot on the screen of the PDP-1 computer in the 1962 game Spacewar and has evolved through to today's supercomputer-class game cards rendering massively multiplayer online games, vast user-constructed social worlds, and now rapidly proliferating web worlds. In this plenary session, Bruce Damer will illustrate how the virtual world is becoming a revolutionary and ubiquitous new medium for human presence in 21st Century Cyberspace, Streetspace, BioSpace, and OuterSpace.

**Bio.** Bruce's work with the early avatar and virtual worlds community in the 1990s helped create a new medium for human presence in Cyberspace, capable of hosting large scale events, novel learning spaces and new forms artistic expression. Bruce will give us a tour of this still-emerging CyberSpace and how it is changing the way we interact and think about ourselves. When we walk out into StreetSpace wearing our ubiquitously interconnected devices, we can now be seen as avatars emerging from Cyberspace and entering the physical world. As cyber-garments, implanted MEM-tronics, and smart mobs cloak us, infuse us and envelop us, our presence on the street will become augmented through and by CyberSpace. As medical diagnostic simulation grows in power, able to scan and model the whole human body, cancer, heart disease and other causes of premature death need never go undetected. Future verdant virtual worlds of the BioSpace (including Bruce's EvoGrid concept) might begin to harness the very power that created us and our world: evolution. Looking further ahead, the rovers on Mars are vanguard avatars of humanity on another world, suggesting that tele-presence may bring the solar system within our grasp long before human hands reach into red soil. Bruce will share his ten year odyssey with NASA which has brought CyberSpace into OuterSpace and given us a whole new view of how we might emerge from our Earthly womb. For more background on Bruce's work, please visit the sites below:

Bruce Damer's personal site - <http://www.damer.com>

Avatars and their worlds at the Contact Consortium - <http://www.ccon.org>

Bruce's Cyberwearz garments - <http://www.cyberwearz.com>

Virtual Worlds in BioSpace at Biota.org & the EvoGrid - <http://www.biota.org> and <http://www.evogrid.org>

Simulation of Space for NASA at DigitalSpace - <http://www.digitalspace.com>

and

The history of personal, interactive computing at the Digibarn Computer Museum - <http://www.digibarn.com>