JAYFUS TUCKER DOSWELL, PHD
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President/CEO
Juxtopia, LLC

Board Chairperson
The Juxtopia Group, Inc.

CAREER BRIEF

Jayfus T. Doswell is founder, president, and CEO of Juxtopia, LLC, a privately held biomedical and information technology (BIO-IT) company and an innovative leader in human performance improvement products and services. Juxtopia's innovative products are designed to integrate into a human's daily routine and provide services to improve human health and learning for a lifetime. Juxtopia, along with its research alliances, conduct empirical multidisciplinary research on how convergent emerging technologies can quantitatively improve human health and learning performance.

Dr. Doswell is also founder and board chairperson of the Juxtopia Group, Inc., a 501 c (3) non-profit organization established in 2000. The Juxtopia Group develops and evaluates learning technology tools for distribution into informal learning environments for the purpose of achieving the following goals: 1.) Reduce the critical learning gap of underserved and disadvantaged minorities in science, technology, engineering, and mathematics (STEM) from grades K through 12; 2.) Increase the number of underserved and disadvantaged minorities that pursue PhD degrees and contribute to STEM related careers. As a result, The Juxtopia Group, Inc. conducts empirical theoretical and application based research investigating effective learning technology tools and pedagogical approaches to improve, augment, and accelerate human learning performance. Through the Juxtopia Group, Dr. Doswell advises PhD students around the world with STEM concentrations and also mentors minority owned start-up businesses. He has personally mentored over 30 students varying in ages and from several countries ranging from India to Egypt and low income students in Baltimore, Virginia, and Washington, DC. Additionally, Dr. Doswell has addressing congress on advanced technology areas.

The Juxtopia Group, Inc. and Juxtopia, LLC are closely aligned. The Juxtopia Group, Inc. conducts empirical research and development of learning technologies for its target group. Juxtopia, LLC distributes learning technologies from The Juxtopia Group, Inc. that will have the highest instructional and commercialization impact.

Having served in leadership roles as consultant and/or trainer, Dr. Doswell , consulted with, and held leadership positions at several different companies and organizations, and federal agencies including Maryland Medical Systems, CompuServe, Lockheed Martin, BearingPoint, Scientific Applications International Corporation (SAIC), VirtualLogic, TRW, National Cancer Institute Center for Bioinformatics, among others. Dr. Doswell has spent over 13 years with a multidisciplinary concentration in advanced learning technologies and health informatics and health information technology research.

Dr. Doswell's advanced learning technologies research focuses on learning technology interventions to improve human learning performance including mixed reality learning simulation, e-learning simulations, and video games for learning. He has developed and continually improves a unique system/software architecture for building families of virtual instructors or what Dr. Doswell has coined, the *Pedagogical Embodied Conversational Agent* (PECA). The PECA is an embodied artificial intelligent instructor that autonomously instructs human learners within mixed reality environments. To advance this multidisciplinary virtual instructor research, Dr. Doswell chairs the IEEE virtual instructor pilot research group that empanels international researchers for providing an international standard on building

virtual instructors. He has also advised Gibbs College and Devry University on a novel video game curriculum for advancing science, technology, engineering, and math skills.

In health informatics and health information technology research, Dr. Doswell has lead reseach on fetal surveillance, telemedicine/telehealth, nanobiotechnology, and nanotechnology ethics. Dr. Doswell co-organized the American Public Health Association's first Health Informatics and Information Technology (HIIT) group and co-organized the first business meeting at APHA that discussed Nanotechnology for public health. Dr. Doswell also initiated and is leading an effort to engage minority serving institutions for health and learning technology research, which was endorsed by several members of the United States congress.

Dr. Doswell has presented his research to academic and non-academic conferences including, but not limited to the International Conference on Computer Information Technologies in Education, International Conference on Computer Graphics Imaging and Visualization, International Conference on Computer Graphics and Interactive Technologies, IEEE International Conference on Advanced Learning Technologies, Society of Applied Learning Technologies, International Digital Media Conference, International Museum and Web Conference, International Conference on Artificial Intelligence in Education, National Medical Association Annual conference, and American Public Health Association annual conference. He has also published industrial research to the IEEE Pervasive Computing magazine.

Dr. Doswell has also been quoted and features in national and local newspapers, magazines, TV, and radio including the Maryland Daily Record, Baltimore Washington Business Journal, Diverse Issues in Higher Education, Morgan State University radio station, MHz TV Networks, and CNN Headline news.

Dr. Doswell has also successfully won and executed grants from the National Science Foundation including a recent STTR grant with Georgetown University to create a novel Augmented Reality Intelligent Instruction System for use by manufacturers, medical professionals, US military warfighters, K-12 students, and to support homeland security first responders. Dr. Doswell also has experience writing and assisting other companies and universities write Small Business Innovative Research (SBIR) grant proposals for the National Institutes of Health, National Science Foundation, Department of Homeland Security, Department of Defense, and Department of Education.

EDUCATION

2005 Ph.D., Information Technology, George Mason University

Dissertation:
Building The Virtual Instructor: An Architecture For Developing Pedagogical Embodied Conversational Agents For Mixed Reality Environments

COMMITEES

2005-present	Director, Virtual Instructors Pilot Research Group, IEEE Computer Society Technical Committee on Learning Technology
2005-present	Healthcare Information and Management Systems Society (HIMMS) Davies Awards Program Committee
2006-present	Interactive Technologies, Maryland County Economic Business Development
2006-present	Translationally-Oriented Approaches, Devices & Strategies (TOADS), National Institute of Drug Abuse

2006-present	ITT Technical Institute Professional Advisory Committee
2007-present	International Edutainment Conference Program Committee member
2007-present	Baltimore City Community College Business Advisory Committee
2007-present	IADIS International Conference on Cognition and Exploratory Learning in Digital Age 2007 Program Committee
2007-present	International Journal of Virtual Reality (IJVR) Editorial Committee
2007-present	IEEE International Conference on Digital Game and Intelligent Toy Based Education Committee
2007-present	Editor and Chief, International Journal of Urban Learning Technology (iJULT)
2009-present	Assistant Editor, APHA Health Informatics and Information Technology (HIIT) e-Newsletter.
2010-present	APHA HIIT Consumer Product Scientific Evaluation

PROFESSIONAL BACKGROUND

2001-present	President/CEO Juxtopia, LLC
2010-present	Chair, Biotechnology, Sojourner Douglass College
2010-present	Vice President of Research for Phezu Space, LLC
2007-2010	Distinguished Professor of Biotechnology, Elizabeth City State University
1999-2001	Systems Analyst-Technical Lead, KPMG Public Services,

BOARD MEMBERSHIPS

2003– 2011	Gibbs College Visual Communications Advisory Board
2005- Present	Morgan State University, Earl Graves School of Business, Entrepreneurial Development & Assistance Center Advisory Board
2006-Present	National Great Blacks In Wax Museum Board.
2006-Present	Board of Directors of the Community Media of Baltimore City (CMBC).
2007- 2009	Elizabeth City State University (ECSU) Pharmaceutical Science Advisory Board
2008-Present	National Electronics Museum
2011-Present	Bowie State University Department of CS External Advisory Board
2012-Present	Coppin State University Health Science External Advisory Board

CORPORATE COMPETITIONS

2008–	American Security Challenge, first round awardee.
2010-	Baltimore Economic Business Alliance RockStar recognition.
2010–	CCAT 1401 First Responder R&D final round.
2010-	TD3 Showcase for Augmented Reality in the UK.

COMMUNITY "STEM" COMPETITIONS & ENGAGMENT

2008- present	Google Lunar X PRIZE challenge, JURBAN team (The Juxtopia Group)
2010-present (pending)	The Urban Space Entrepreneurship Challenge (The Juxtopia Group)
2010-present	NASA Goddard Space Flight Center and Juxtopia Space Act Agreement

2010-present	The Career Communication Group and Juxtopia Urban Learning Technology CCG JULT Engineering Competitions.
2011-present	The Juxtopia® Urban Innovative and Cooperative Entrepreneurship (JUICE)

PAPERS, PRESENTATIONS, AND CONFERENCES

Health Informatics and Health Information Technology

Doswell, Jayfus (2002), "Augmented-Reality Systems for Treating Drug Dependency". Wearable Computing. IEEE Pervasive Computing, pp. 71-73.

Doswell, Jayfus (2002), "Preparing the Public for Possible Bioterrorist attacks: Using '3D visualization health informatics' as a tool for Training and Education, The National Medical Association Annual Conference. Wakiki, Hawaii.

Doswell, Jayfus (2002), "Innovative Uses of Tele-health and Telemedicine", National Medical Association Annual Conference. Wakiki, Hawaii.

Doswell, Jayfus (2003), "Innovative Use of Technology in Public Health Practice", 131 American Public Health Association Conference. San Francisco, CA.

Doswell, Jayfus (2004), "Ubiquitous Public Health: The Future of Consumer Health Information Infrastructures", 132 American Public Health Association Conference, Washington, DC.

Doswell, Jayfus (2004), "Public Health Enviromatics: A New Public Health Care Delivery Model for Preventing Environmental Illness and Disease", 132 American Public Health Association Conference. New Strategies in Information Technology Session. *Panel Session Presider*.. Washington, DC.

Doswell, Jayfus (2004), "Consumer Public Health", 132 American Public Health Association Conference: Health Informatics Is the Future of Public Health panel. Washington, DC.

Doswell, Jayfus (2005), "At-Risk Fetal Surveillance: Preventing Adverse Fetal Health", 133rd American Public Health Association Conference, Philladelphia, PA.

Chen, E, Doswell, J. Giordano, M., et. al. (2005). "HL7 SDK - Health Level Seven Software Development Toolkit.", Poster Session, NIH Research Festival, Bethesda, MD.

Chen, E, Doswell, J. Giordano, M., et. al. (2005). "HL7 SDK - Health Level Seven Software Development Toolkit.", Poster Session, American Medical Informatics Association (AMIA) Annual Forum Bethesda, MD.

Doswell, Jayfus (2006), "Remote Fetal Surveillance: Preventing Adverse Fetal Events", American Telemedicine Association Conference, San Diego, CA.

Doswell, J., Gibbs, S., Duncanson, K., (2009) "Communication Systems Architecture: Networking Health Provider Organizations and Building Virtual Communities", Health Management Information Systems. Tan, J., Payton, F.C., Jones and Barlett Publishing.

Doswell, J., Sampson, O., Jeffrey, M. (2010) "WASA MIST Wearable Assistant for Real-Time Emergency Care Providers". The 15th Annual International Meeting of the American Telemedicine Association.

Doswell, J., (2010) “Wearable Telehealth for Trauma Care Delivery in Disadvantaged Populations”. 138th Annual Meeting & Exposition of the American Public Health Association., Denver, CO

Doswell, J., (2010) “Context-Aware Augmented Reality System for Medical First Responders”. Proc. In the XII Symposium on Virtual and Augmented Reality, Rio Grande do Norte, Brazil.

Wilson, J., Doswell, J., (2010), “Using Wearable Augmented Reality as a Clinical-Decision Support Tool”. mHealth Summit. Session on Emergency Response & Mobile Technology. Washington, DC.

Adeboye, Ologhobo, O., Ochieng, E., Gillis, D., Doswell, J., Sofolahan, A., Dickens, C., (2010). “Context-Aware Augmented Reality System: A Medical First Responder Situational Awareness Interface.”. Poster Session. Medicine Meets Virtual Reality (MMVR) Conference. Newport Beach, California.

Wilson, K., Debeatham, W., Danner, O, Matthews, L., Doswell, J., (2010). “How A Human Cadaver Model and Augmented Reality Combined Can Educate Novices in the Performance of Medical Tasks with Minimal Psychomotor Familiarization”. The Juxtopia Urban Learning Technology (JULT) 2010 Conference. Baltimore, Maryland.

Sofolahan, A.,. Ologhobo, O., Flucas, R., Hall, B., Smith, H., Mallory , O., Griffin, C., Beasley, J., Dickens,C. “A Wearable Augmented Reality Product for Improving Emergency Medical First Response and Training”. The Juxtopia Urban Learning Technology (JULT) 2010 Conference. Baltimore, Maryland.

Balaji, K., Kazanzides, P., Doswell, J. “Intelligent Navigation System for Surgery (WINSS)”. The Juxtopia Urban Learning Technology (JULT) 2010 Conference. Baltimore, Maryland.

Anderson, M., Doswell, J (2010), “Wearable Augmented Reality Nursing Trainer (WANT)”. The Juxtopia Urban Learning Technology (JULT) 2010 Conference. Baltimore, Maryland.

Ologhobo, O., Hall, B., Flucas, R., Sofolahan, A., Smith, H., Doswell, J. (2010) “Developing a Wearable Operating System”. The Juxtopia Urban Learning Technology (JULT) 2010 Conference. Baltimore, Maryland.

Doswell, J., Anderson, M., Wilson, K., Kazanzides, P., et. al., (2012), “Wearable Augmented Reality for Medical First Response & Situational Awareness”. Medicine Meets Virtual Reality (MMVR19) NextGen Conference. Newport Beach, California.

Azimi, E., Doswell, J., Kazanzides, P., (2012), “Augmented Reality Goggles with an Integrated Tracking System for Navigation in Neurosurgery”. IEEE Virtual Reality Conference. Orange County, California.

Doswell, J., et. al., (2012), “Using Wearable Augmented Reality to Augment Skills for Public Health Providers”, 140th Annual Meeting & Exposition. American Public Health Association, San Francisco, CA.

Advanced Learning Technology

Doswell, Jayfus (1999), “Internet-Based Virtual Reality for Math Instruction”. The Society of Applied Learning and Technology (SALT) conference in Arlington, VA.

Doswell, Jayfus (2002), HCI International 2003, Developing Human Adaptive Pedagogical Agents.

Doswell, Jayfus (2004), “Pervasive Pedagogical Embodied Conversational Agents: Interacting with Wireless Virtual Instructors inside and outside the classroom” International Conference on Computer Information Technologies in Education (ICICTE) in Samos Island, Greece.

Doswell, Jayfus (2004), “International Symposium of Autonomous Conversational Agents. CGIV04”. International Conference Computer Graphics, Imaging and Visualization (CGIV04) in Singapore (revise)

Doswell, Jayfus (2004) “Building The Virtual Reality Instructor” SIGGRAPH Conference 2004. Education Forum. in Los Angeles, California.

Doswell, Jayfus (2004), “Pedagogical Embodied Conversational Agents”, Social Intelligent Agents (Session Chair): IEEE International Conference on Advanced Learning Technologies in Joensuu, Finland.

Doswell, Jayfus (2004), “Pervasive Pedagogical Embodied Conversational Agents: Interacting with Wireless Virtual Instructors anytime, anywhere, at any-pace” Society of Applied Learning Technologies: Interactive Technologies Conference in Arlington, VA.

Doswell, Jayfus (2005), “Pervasive Pedagogical Embodied Conversational Agents” Society of Applied Learning Technologies: New Learning Technologies Conference in Orlando, Florida.

Doswell, Jayfus (2005), “Pervasive Pedagogical Storyteller: Interactive History in Mixed Reality Environments”, Second International Digital Media Conference (Digimedia 2005). *conference theme: "Multimedia uses in education and Entertainment for children"*:. Cairo Egypt.

Doswell, Jayfus (2005), “The PECA Code: Codifying Pedagogy in 3D Virtual Instructors”, Museums and the Web 2005: The International Conference for Culture and Heritage On-line:. Vancouver, British Columbia, Canada

Doswell, Jayfus (2005), “PECA: Pedagogical Embodied Conversational Agents in Mixed Reality Learning Environments”, The 12th International Conference on Artificial Intelligence in Education. Amsterdam, Netherlands.

Doswell, Jayfus (2005), “It’s Virtually Pedagogical: Pedagogical Agents in Mixed Reality Learning Environments”, 32 International Conference on Computer Graphics and Interactive Technologies (SIGGRAPH) Conference, Education Forum, Los Angeles, California.

Doswell, Jayfus (2005), *Session Chair:* Society for Applied Learning Technologies (SALT): Interactive Technologies, Learning Game track. Arlington, VA.

Blake, M.B. and Doswell, J.(2006) “Context-Aware Augmented Reality System (CAARS)”. SALT New Learning Technologies Conference. Orlando, FL.

Blake, M.B., Green, J., Doswell, J, (2006). An Agent-Supported Multimodal Scaffolding Infrastructure. 6th IEEE International Conference on Advanced Learning Technologies. Theme: *Advanced Technologies for Life-Long Learning*. Kerkrade, The Netherlands.

Doswell, J., Blake, M.B., Green, J., Mallory, O., Griffin, C. (2006) “Augmented Reality Learning Games: 3D Virtual Instructors in Augmented Reality Environments”. ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games. Electronic Arts Redwood City campus.

Doswell, J. (2006) “Virtual Instructors In Mixed Reality Environments”. Edutainment Conference: Storytelling, Games and Edutainment Tutorial. Zhejiang University, Hangzhou, China.

Doswell, J. (2006) “Augmented Learning: Context-Aware Mobile Augmented Reality Architecture for Learning. *Workshop*: Mobile Technology and Content Delivery in Education. 6th IEEE International Conference on Advanced Learning Technologies. Theme: *Advanced Technologies for Life-Long Learning*. Kerkrade, The Netherlands.

Doswell, J. (2006) "Instruction Through The Ages: Building Pervasive Virtual Instructor for Life Long Learning. (*Session Chair). Panel*: Building Virtual Instructors. 6th IEEE International Conference on Advanced Learning Technologies. Theme: *Advanced Technologies for Life-Long Learning*. Kerkrade, The Netherlands.

Doswell, J., (2006), "Context-Aware Mobile Augmented Reality Architecture for Lifelong Learning". 6th IEEE International Conference on Advanced Learning Technologies. Theme: *Advanced Technologies for Life-Long Learning*. Kerkrade, The Netherlands.

Mosley, P., Doswell, J. (2006). **"**An Innovative Approach to Teaching Robotics". Panel: Building Virtual Instructors. 6th IEEE International Conference on Advanced Learning Technologies. Theme: *Advanced Technologies for Life-Long Learning*. Kerkrade, The Netherlands.

Mosley, P., Doswell, J. (2006). **"**Robotics In Mixed-Reality Training Simulations: Augmenting STEM Learning". Panel: Concretizing Technologies (e.g. Robotics) in Learning. 6th IEEE International Conference on Advanced Learning Technologies. Theme: *Advanced Technologies for Life-Long Learning*. Kerkrade, The Netherlands.

Doswell J., Blake, M.B., Green, J. (2006). "Mobile Augmented Reality System Architecture for Ubiquitous e-Learning". 4th IEEE International Workshop on Wireless, Mobile and Ubiquitous Technologies in Education. Athens, Greece.

Doswell J., Fletcher, A., Marghitu, D., Russell, D. (2007). " 'Hello, Mr. Chips': Towards Robotic Tutors in Higher Education?". The EDUCAUSE Learning Initiative (ELI) Annual Meeting. Atlanta, GA.

Doswell, J., Mosley, P., (2007) "A Virtual Instructor Service-Oriented Architecture for Teaching Robotics in Mixed Reality". pp. 17-22. Journal of Computers. Vol2, Iss.4., June 2007.

Doswell, J., (2008) "Pedagogy Play: Virtual Instructors for Wearable Augmented Reality During Hands on Learning and Play" (Workshop). 2nd IEEE International Conference on Digital Game and Intelligent Toy Enhanced Learning.

Mosley, J., Doswell, J., (2008) "The Virtual Instructor Intervention: A Case in LEGO Robotics". The International Journal of Virtual Reality, 2008, 7(1): 15-20.

Mosley, J. Liu, Y., Doswell, J., Hargrove K.S.,(2010) "An Industry-Academia Partnership for the Design of A Robotics Technician Curriculum". 16th International Conference on Industry, Engineering, & Management Systems.

Mosley, J. Liu, Y., Doswell, J., Hargrove K.S.,(2010) "A Pre-Engineering Program Using Robots to Attract Underrepresented High School and Community College Students". Journal of STEM Education: Innovations & Research.

Ologhobo, O., Ochieng, E., Gillis, D., Sofolahan, S., Doswell, J., (2010) "Wearable Augmented Reality for Maintenance Assistance. National Technical Association (NTA) 2010 Conference. Baltimore, Maryland.

Urban Entrepreneurship Training

Doswell, J. (2009), "The Google Lunar X PRIZE JURBAN Team". 1st Urban Space Entrepreneurship Forum. Washington, DC.

Doswell, J. (2010), "Understanding SBIR/STTR grants". 2010 Minority Serving Institutions Research Parrnership (MSIRP) conference. Baltimore, MD.

Doswell, J. (2010), "Funding your Space Venture". 2nd Urban Space Entrepreneurship Forum. Washington, DC.

REFEREE/DISCUSSANT WORK

The Juxtopia Urban Robotics Brilliant Application Network (JURBAN) Program, 2007-Current.
American Public Health Association Conference, 2003-Current
Juxtopia Urban Learning Technology (JULT) Conference, 2006-Current
HIMSS Davies Award Committee, 2005-2009
Edutainment, International Program Committee, 2006-Current
International Journal of Virtual Reality, editorial committee, 2006-current
International Virtual Instructor Pilot Research Group (VIPRG), conference planning committee, 2006-current.
2nd IEEE International Conference on Digital Game and Intelligent Toy Enhanced Learning.
Digital Media and its Application in Museum & Heritage (DMAMH) 2009.
International Journal of Urban Learning Technology, Editor in Chief, 2010-current
The Health Informatics Information Technology Journal, Deputy Editor 2011-current

PROPOSAL REVIEW WORK

American Public Health Association
American Telemedicine Association
IEEE
International Journal Of Electronic Healthcare
IEEE Visualization
International Journal of Virtual Reality, Editorial Board
Information Technology & Technical Aids of Learning Journal of Educational Technologies & Society
National Science Foundation Proposal Review Committee
National Institutes of Health SBIR/STTR Phase I Review Committee
National Science Foundation SBIR/STTR Phase II Review Committee

MEMBERSHIPS

- American Telemedicine Association (ATA),
- American Public Health Association (APHA),
- Association for Computing and Machinery (ACM),
- Greater Baltimore Black Chamber of Commerce (GBBCC) Health Committee
- Institute of Electrical and Electronics Engineers (IEEE),
- IEEE Computer Society,
- National Society of Black Engineers (NSBE),
- Society for Applied Learning and Technology (SALT),

LEGISLATION

Joint Urban Learning Technology (JULT) bill: Dr. Doswell drafted legislation for inner city urban youth to apply learned STEM knowledge to solve problems in their inner city communities in order to reinforce STEM skills, appreciate its real-world application, and expose youth to patent relevant innovation.

GRANTS

National Science Foundation, SBIR/STTR Phase IIA (CREST) supplement, "Advanced Optical See-Through Head Mounted Display for Mobile Augmented Reality Display". Delaware State University and Juxtopia® collaboration. 2009-2010.

University of Maryland. Maryland Industrial Partnerships**, "**Speech Enhancement for Mobile Devices in Noisy Environments". University of Maryland College Park's Dr. Carol Espy Wilson and Juxtopia®. 2009-2010.

National Science Foundation, SBIR/STTR Research Experiences for Teachers (RET) supplement, "Pedagogy Taxonomy for Wearable Virtual Instructors". Frederick Douglass High School (Baltimore, MD) Teacher, Lynn Patterson, Ph.D. candidate and Juxtopia. 2008-2009

Maryland TEDCO, "Wearable Assistance and Situational Awareness (WASA) for Voice-On-Demand Display of Electronic Medical Records". 2008-2009

National Science Foundation, Virtual Instructor Pilot Research Group (VIPRG) workshop grant, 2006-2007.

National Science Foundation, "STTR Phase II: Intelligent Instruction Systems using Augmented Reality", Juxtopia, LLC and Georgetown University. 2007-2009.

The History Channel, Save Our History Grant, "Digitally Preserving the Life of Frederick Douglass, a local Baltimorean", The National Great Blacks in Wax Museum. The Juxtopia Group, Inc., and Frederick Douglass High School of Baltimore, MD, 2006-2007.

National Science Foundation, "STTR Phase I: Intelligent Instruction Systems using Augmented Reality", Juxtopia, LLC and Georgetown University. 2005-2006.

Maryland Technology Partnership Initiative, Cardio biomedical device market research, University of Maryland School of Business and Juxtopia, LLC, 2004-2005.