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# **Roger Ball**

Curriculum Vitae | Feb 2013

# Education:

PhD | 2008- 2011 | TU Delft University, Faculty of Engineering | Delft, Netherlands MFA | 2002-2003 | Product Design (with Distinction), Domus Academy | Milan, Italy AOCA | 1980-1983 | Industrial Design Diploma, Ontario College of Art and Design | Toronto, Canada

# Administrative experience:

Program Leader | 2004 – Present | MDes in Advanced Practices, The Hong Kong Polytechnic University | Hong Kong

- Responsible for developing curriculum, initial course validation, committee work and promotion of MDes program.
- Extensive experience in supervision of post graduate students (100+)
- Recruit industrial partners and negotiate contracts.
- Teach workshop modules and capstone project.
- Manage program on daily basis.

Lab Leader | 2005 – Present | Asian Ergonomic Lab, The Hong Kong Polytechnic University | Hong Kong

- Manage three full time research personnel and research engineers and scientists.
- Develop design tools based on Asian Anthropometric primary research.
- Develop new curriculum based on original research
- Consultancy with industrial partners.
- Develop international research collaborations and joint research projects.

Leader | 2007 – 2010 | Co-Leader, SDWorks, The Hong Kong Polytechnic University | Hong Kong

- Responsible for creating a business that commercializes student work.
- Develop curriculum to support entrepreneurship.
- Negotiate contracts and licensing agreements.
- Supervise production, packaging, branding and website development.

Program Leader | 2005 – 2011 | I-do Summer Workshop, The Hong Kong Polytechnic University | Hong Kong

• Leader for 6 week international design workshop. Students from 5 countries form teams to work on industry sponsored projects.

Chairman | 1990 – 1992 | Industrial Design Dept, Ontario College of Art and Design | Toronto, Canada

• Develop post graduate curriculum, responsible for budgeting, committee work and promotion of Industrial Design Dept. Recruiting, interviewing and hiring of staff and instructors.

# **Teaching Experience:**

Eric Yim Endowed Professor of Asian Ergonomics | 2003 |

• Manage endowment and lead the Asian Ergonomic Central Research Facility. Develop the next generation of China Fit

tools.

Professor | 2003 - Present | The Hong Kong Polytechnic University | Hong Kong

 Taught all levels of Industrial Design Program in Diploma, Bachelors and Masters Programs. Courses include;: Design Studio 3 –Scan & Print, Design Studio 4 - DesignDirect, Design for Leisure, Ergo-Interactive Experience, Strategic Product Design and China Lifestyle

Transformation and Capstone Project. Strategies for Sustainable Product Design, Universal Design, Final Year Project. Assistant Professor (part time) | 1987 – 2003 | Ontario College of Art and Design | Toronto, Canada

• Taught all levels of Industrial Design Program. Courses included: Advanced Sports Design, Design for Capital Goods and Services, Universal Design, Visual Organization, Visualization and Sketching, Design Methodology, Design Ergonomics and Team leader Year 4 Final Project.

Senior Lecturer | 2002-2001 | Sheridan College of Design and Animation | Oakville, Canada

Senior Lecturer | 2002-2001 | Humber College of Advanced Technology | Toronto, Canada

# **Research Work:**

SizeChina.com | 2003- present | Director

• This project created the first 3D high resolution digital database of Chinese head and face shapes. We create design tools for students and industry. The goal is to create better fitting products for the Chinese population. The database of over 2000 subjects from six provinces in mainland China was achieved with partners in mainland universities and experts from USA, EU and Hong Kong. Project budget of HK\$ 5.3 million was funded by Hong Kong government and multiple industrial partners.

Product Design for Sustainable Social Development in Ethnic Minority Communities in the Yunnan Province | 2006-2007 | Co-investigator/design team leader

• Team leader of 30 international tutors and students to research, design and develop a line of consumer products based on local skills and materials. The mission is to develop a local economy based on design without destroying the unique minority culture and environment.

Usability and Ergonomics in Keyboard Design | 2004 - 2005 | Principal Investigator

• This research focused on how different user groups approach keyboarding. Using a variety of research techniques: video tape, observational research, focus groups and custom research tools we generated design concepts individually customizable keyboards.

### **Professional Experience:**

CEO | 1987 – 2003 | Paradox Design | Toronto, Canada

- Created a company that provides clients with A-Z creative, manufacturing and testing services. Including: expert concept drawings, logos, packaging, rapid prototyping, production tooling, sourcing of materials and suppliers, standards testing and certification, patent applications and documentation, market research, focus groups, integration of new technology for CAD design and manufacturing.
- Created and developed a series of leading edge premier consumer products.
- Spearheaded Paradox Design's growth from a small regional company into an international award winning enterprise.
- Directed Paradox's growth into diversified market areas including sports equipment, medical devices, house wares and toys.

Design Lead | 1985 –1987 | Cooper Canada | Toronto, Canada

- Responsible for a design team of twenty designers and support staff.
- Scheduling of two hundred design projects annually including tooling and capital requirements for all projects.
- Responsible for initial production runs of all new products.
- Instrumental in the development of Cooper's ice hockey, lacrosse and baseball protective lines.

Designer | 1982 –1985 | Cooper Canada | Toronto, Canada

- Created original designs for ice hockey, lacrosse and baseball equipment.
- Instrumental in creating the revolutionary and highly successful Cooper Adjustable Batters Helmet.
- Model making and prototyping of ice hockey products. Design of helmet components and liners. Design of wire and plastic facemasks for Canadian, American and European testing and certification.

#### Patents:

• Holder of twenty US and international patents.

### Partial Client List:

3M, Allied Signal, Bata Shoes, Bell Sports, Brine Inc., Burton Snowboards, Everst&Jennings, Itech Sports, Microsoft, Mitsubishi Electronics, Nike, NeuroSky, Somerville House, Steve Bauer Bicycles, Troxel, Worth Sports.

## **Design Awards:**

- 2011 World Impact Design Prize | Finalist
- 2009 Index Award | Finalist
- 2009 President's Award for Research | HKPU
- 2008 DFA (Design for Asia Awards) | Grand Prize
- 2008 Fortune Magazine (China) | Chinas Most Successful Designs
- 2008 IDEA /BusinessWeek | Best in Show
- 2008 IDEA /BusinessWeek | Gold Medal Research
- 1998 IDEA /BusinessWeek | Silver Medal Leisure/Sports
- 1998 Design Engineering | Best Consumer Product
- 1998 Virtu Design Competition | Best consumer Product
- 1989 Canadian Plastics | Best Consumer Product
- 1985 IDEA /BusinessWeek | Bronze Medal Leisure/Sports

### **Professional Associations:**

- Professional member | American Society for Testing and Materials | ASTM
- Professional member | Industrial Design Society of America | IDSA
- Professional member | Hong Kong Designers Association | HKDSA
- Professional member | Hong Kong Ergonomics Society | HKES
- Professional member | Human Factors and Ergonomics Society | HFES

# **Publications:**

- Ball R. Overhill H., DesignDirect -how to start your own microbrand. 2012, Ptec Hong Kong
- Ball R., "Designing Apparel for consumers: the impact of body size and shape", Chapter 20, Woodhead Publishing, UK 2013 (in press)
- Luximon Y., Chow H.C.E., Ball R., A Study of Ear Dimensions for Chinese, Proceedings of International Conference on Innovative Design and Manufacturing (Taipei, Taiwan), December 2012.
- Ball R., 2012. "Designing protective headgear. Human Factors and Ergonomics in Consumer Product Design: Uses and Applications." Chapter 19, Taylor and Francis, USA. Impact factor 1.205. Book chapter.
- Ball R., 2011. "SizeChina A 3D Anthropometric Survey of the Chinese Head.." Doctoral Thesis, ISBN 978-9051550054-2
- Ball R., Luximon Y. and Chow H.C.E., 2011. "Anthropometric Study on Chinese Head," submitted to Asian Workshop on 3D body scanning technology, Tokyo, Japan, 19-20 April 2011.
- Ball R. and Luximon Y., 2011. "A comparison of different methods for head measurements" (submitted to International Journal of Human Factors Modeling and Simulation).
- Luximon Y., Ball R. and Justice L., 2011. "The 3D Chinese head and face modeling," Computer-Aided Design. Impact

factor 1.667. PolyU A journal.

- Ball R., Shu C., Xi P., Rioux M., Luximon Y. and Molenbroek J., 2010. "A comparison between Chinese and Caucasian head shapes," Applied ergonomics, 41 (6): 832-839. Impact factor 1.105. PolyU B journal.
- Luximon Y., Ball R. and Justice L., 2010. "The Chinese face: A 3D anthropometric analysis," Proceeding of the TMCE2010, Edited by I. Horváth, F. Mandorli and Z. Rusák, April 12-16 2010, Ancona, Italy.
- Daanen, H.A.M., Krul, A.J., Ball, R., 2010. "Face dimension requirements for passports," Journal of the British Travel and Health Association, 15, 53-56. Impact factor 1.105. PolyU B journal.
- Ball, R.M., 2009. "3-D design tools from the SizeChina project." Ergonomics in Design, 17(3), 8-13(6). Impact factor 1.105. PolyU B journal.
- Reitenbach, M.E.F.R., Jochems, A.J., Molenbroek, J.F.M., Ball, R., van Eijk, D.J., 2009. "User Experience of Office Chairs and Anthropometrics of Female Chinese and Hong Kong Chinese Office and Factory Workers" (the TU Delft Institutional Repository). The Ergonomics Open Journal 2(1), 1-12.
- Ball, R.M., 2008. "SizeChina: The world shapes up." Innovation, Fall 2008, 158-161.
- Ball, R.M., Molenbroek, J.F.M., 2008. "Measuring Chinese Heads and Faces." Proceedings of the 9th International Congress of Physiological Anthropology, Human diversity: Design for life. Delft, the Netherlands, 150-155.
- Bracht, P., Visser, A.A., Ball, R., 2008. "I do: a pressure cooker model for the experience of cultures and design." Proceedings of Business of Education Week, Hong Kong, 2008.
- Hu, Catherine., Ball, R., 2007. "The Only Connect Experience"" Proceedings of Industrial Design Society of America (IDSA.)

# **Research Fundraising - Principal Investigator:**

- Ball R. and Luximon Y. (2010), "Development of 3D Chinese head and face prediction model for product design," General Research Fund - Hong Kong Government, HK\$741,600 (Submitted to Research Grants Council for 2011/2012).
- Ball R. and Luximon Y. (2010), "Development of 3D Chinese head and face prediction model for product design," The Hong Kong Polytechnic University, HK\$105,000.
- Ball R., Justice L. and Luximon Y. (2009), "A 3D design tool for Chinese fit product design," School board Chairman Reserve, The Hong Kong Polytechnic University, HK\$999,520.
- Justice L., Ball R. and Luximon Y. (2009), "Development of 3D digital ergonomic design tools," The Hong Kong Polytechnic University Postdoctoral fellowship HK\$736,000.
- Ball R. (2006), "Perfect fit China," DesignSmart Initiative (DRS/002/04), HK\$6,487,000.

# Sales of Licensed Research Outputs:

Certiform Sales (SizeChina Data Purchases until Jan 2012)

- Philips Research Laboratories (1500 full set 3D scans (IGES) (US\$28,000) 2012
- Manufacture Cartier Lunettes (2 x Digital Faceform 50% male, 50% female (IGES and STL)) (Euro10,000) 2011
- Delft University of Technology (1 x CNC Headform size 560) (US\$2,500) 2011
- HKSM Macao Commercial Offshore Ltd. (2 x CNC Headform size 570, 590) (US\$5,000) 2011
- Trek Bicycle Corp. (2 x Digital Headform size 570, 600 (IGES)) (US\$10,000), (1 x Frequency distribution report (custom report)) (US\$250), (1 x CNC Headform size 570) (US\$5,000) 2011
- DECATHLON campus | OXYLANE research (CHDI1500FV 1500 full set 3D scans (IGES) & measurements database) (Euro 20,000) 2010
- Honeywell (Custom package 26-person set 3D scans (IGES) & measurements database) (US\$2,500) 2010
- Logitech (12 set 3D scans (IGES) & measurements database) (US\$725) 2009
- Revision Eyewear (Custom package 265-person set 3D scans (IGES) & measurements database (custom package 18-30 males military spec)) (US\$7,500) 2008
- Anthrotech (1500 full set 3D scans (IGES) & measurements database) (US\$14,450) 2008
- 3M (CHDI0048FV 48 set 3D scans (IGES) & measurements database) (US\$2,850) 2008
- Next Media Animation Limited (480 set 3D scans (IGES) & measurements database) (US\$7,500) 2008

# Consultancy Projects (completed):

- Advanced Design Concepts Workshop for NeuroSky Ltd., California, USA (\$USD 7,500) 2012
- Comfort headset design project, with Microsoft, Washington, USA (\$USD 40,000) 2012
- Costume Design project with Cirque du Soleil, Quebec, Canada (\$USD 5,300) 2011
- Artist Collaboration Head Scanning Sonia Montero, Bolivia (\$USD 2,500) 2011
- Anthropometric headset evaluation for NeuroSky Ltd., California, USA (\$USD \$7,500) 2010

# Invited Speaker (from 2007):

ICSID - World Design Impact Prize | Feb 2012 | SizeChina – The Impact of Design, Speaker, ICSID Awards Helsinki Workshop | FN

DesignKorea | Oct 2011 | SizeChina - Smart tools for Designers, Design Korea Conference, Seoul | KR

INCLUDE Design Conference | April 2011 | SizeChina - Design for diversity, Keynote Speaker, Royal College of Art - Helen Hamlyn Center | UK

INDEX Awards | Oct / 2010 | SizeChina - Design to Improve Life, Keynote Speaker, Index Design Awards Shanghai Workshop | CN ISRP | Oct / 2010 | Comparison of Chinese and Caucasian Headshapes, Keynote Speaker, International Society for Respiratory Protection | HK

ErgoDesign Forum | May 2009 | Anthropometric Design Tools for China, Keynote Speaker | FR

ICPA | Aug / 2008 | SizeChina. The Shape of Things to Come, Keynote Speaker, International Conference of Physical Anthropology | NL

BODW | Dec / 2007 | SizeChina.Unlocking the riddle of Chinese fit, Business of Design Week, HK | HK

Connecting 07 | Oct /2007 | Size China. A Whole new world of Ergonomics. IDSA/ICSID, San Francisco | USA

Die Mitte. Dialogues about Design | Oct / 2007 | SizeChina. What the West needs to know, Keynote speaker. University of Applied Arts, Vienna | Austria

i-do Workshop | July /2007 | Sustainable Design for Ethnic Minorities in Yuunan province, Yuunan University, Yunnan | CN

# **Exhibitions:**

Hong Kong: Creative Ecologies — Business, Living, Creativity Hong Kong Design Centre | 5 Feb - 11 May 2011 | Hong Kong Heritage Museum, Hong Kong, China

INDEX: Best of Index Exhibition 2009. Touring China & India | INDEX: the Danish Ministry of Foreign Affairs

- Mumbai, India | 1-10 February 2011
- Mantri Square, Bangalore, India | 16-26 January 2011
- Avenue Of Stars, Tsim Sha Tsui, Hong Kong, China | 25 November 2 December 2010
- No. 128 Yuancun 4 heng Lu, Tianhe District, Rectory, Guangzhou, China | 27 October 7 November 2010
- No. 32 Qinhuangdao Rd., Yangpu District, Nordic Lighthouse, Shanghai, China | 5-20 October 2010

A Hong Kong SAR programme for EXPO 2010 Shanghai (Hong Kong Creative Ecologies) | 15 May - 31 October 2010 | Hong Kong Design Centre, The Bridge 8 Phase III, No. 550 Ju Men Road, Lu Wan District, Shanghai, China

Norm=Form, on standardization and design | Foundation Design Den Haag

- Zeche Zollverein, Halle 5, Schaft XII (A5), Gelsenkirchenerstrasse 181, Essen, Germany | 28 August 17 October 2010
- Gemeentemuseum Den Haag, Stadhouderslaan 41, The Hague, The Netherlands | 8 May 15 August 2010

Utrecht Manifest 2009: Urgent Methods: Design Education Examined | 4 October 2009 - 15 November 2009 | Utrecht Manifest Jongeriusvilla, Kanaalweg 64, Utrecht, The Netherlands

INDEX: Award Exhibition - Design to Improve Life

- INDEX:, Municipality of Ishøj | Ishøj By Centre, Ishøj, Denmark | 15 February 1 March 2010
- INDEX:, Municipality of Hillerød | SlotsArkaderne, Hillerød, Denmark | 1-21 February 2010
- INDEX:, INDEX: Partner City Singapore | VivoCity, HarbourFront precinct, Singapore | 10 November 9 December 2009
- INDEX: Seoul Design Olympic | Air Dome at Jamail Main Stadium, Seoul, South Korea | 9-29 October 2009
- INDEX: Kongens Nytov square, Copenhagen, Denmark | 21 August 13 September 2009

Winning IDEAs: Selected Product Designs 2008 | 16 April - 25 October 2009 | IDSA (Industrial Designers Society of America) | The Cameron Art Museum, 3201 South 17th Street, Wilmington, NC 28412, USA

Business Of Design Week (BODW) (HKTDC Inno Design Tech Expo 2008) | 10-12 December 2008 | Hong Kong TradDevelopment Council, Hong Kong Science and Technology Parks Corporation, Hong Kong Design Centre, Hong Kong Convention and Exhibition Centre, Hong Kong, China

2008 IDSA International Conference and Exposition | 10-13 September 2008 | IDSA (Industrial Designers Society of America)2008 IDSA National Conference Polar Opposites, Phoenix, AZ, USA

## Media Coverage:

• Research - SizeChina.com - as of December 2010

#### Television/Radio

- Oriental TV, 25/11/2010
- HKBN News, 27/06/2009
- PolyU Youtube Channel, 01/2009
- RTHK, "TechnoFrontier" Series, Episode 6, 05/11/2008
- NOS (Dutch National Television), 08/07/2008
- RTHK, "PolyU 70th", 27/01/2008
- Plastics News, 03/12/2007
- CBC Radio (Canadian Broadcasting Corp.), 11/11/2007
- Cable TV, 11/2007
- Star News Asia, 24/09/2007
- Phoenix TV, 17/09/2007
- Commercial Radio, 17/09/2007
- RTHK, 17/09/2007
- China National Radio, 17/09/2007
- TVB PEARL News, 17/09/2007
- TVB JADE News, 17/09/2007
- CNN International, 11/04/2006
- RTHK (radio), 07/04/2006
- ATV News, 04/04/2006

#### Print Media

- Designsmart Initiative, 2010 | (HK)
- Oriental Daily, 30/11/2010 | (HK)
- The Sun Newspaper, 26/11/2010 | (HK)
- Oriental Daily, 26/11/2010 | (HK)
- New World Development Company Limited, 25/11/2010 | (HK)
- Avernue of Stars, 19/11/2010 | (HK)
- Hong Kong: Creative Ecologies The Shaping of a Design Culture, 17/10/2010 | (HK)
- NRC Handelsblad, 19/05/2010 | (Netherlands)
- Norm=Form, on standardisation and design, Spring 2010 | (Netherlands)

- Design to Improve Life: INDEX:AWARD 2009 Exhibition ,08/2009 | (Denmark)
- Ergonomics in Design, Summer 2009 | (USA)
- AM730, 24/06/2009 | (HK)
- HK Headline Daily, 24/06/2009 | (HK)
- Metro Daily, 24/06/2009 | (HK)
- Ming Pao, 24/06/2009 | (HK)
- Oriental Daily, 24/06/2009 | (HK)
- Sing Pao Daily News, 24/06/2009 | (HK)
- Sing Tao Daily, 24/06/2009 | (HK)
- South China Morning Post, 24/06/2009 | (HK)
- The Sun Newspaper, 24/06/2009 | (HK)
- Wen Wei Po, 24/06/2009 | (HK)
- Sohu.com, 23/06/2009 | (China)
- www.news.cn, 23/06/2009 | (China)
- The Hong Kong Polytechnic University, www.polyu.edu.hk, 23/06/2009 | (HK)
- The Hong Kong Polytechnic University (School of Design). www.sd.polyu.edu.hk, 23/06/2009 | (HK)
- HK PolyU School of Design. www.sd.polyu.edu.hk/facebook, 23/06/2009 | (HK)
- Military Goggles, 03/2009 | (USA)
- Ming Pao, 13/12/2008 | (HK)
- Sing Tao Daily, 11/12/2008 | (HK)
- HKDC Awards' 08, 11/2008 | (HK)
- AM 730, 09/10/2008 | (HK)
- Innovation, Fall 2008 | (USA)
- International Conference of Physical Anthropometry Delft,
- Netherlands, 20-23/08/2008 | (Netherlands)
- The Standard, 12/08/2008 | (HK)
- Toronto Star, 26/07/2008 | (Canada)
- Design Oscar, 22/07/2008 | (Netherlands)
- Oriental Daily, 19/07/2008 | (HK)
- Ta Kung Pao, 19/07/2008 | (HK)
- The Sun Newspaper, 19/07/2008 | (HK)
- Sing Tao Daily, 19/07/2008 | (HK)
- De Pers newspaper, 11/06/2008 | (Netherlands)
- OCAD Sketch, 06/2008 | (Canada)
- Design Diffusion News, 21/05/2008 | (Italia)
- Metropolis Magazine , 03/2008 | (USA)
- HK Commercial Daily, 27/12/2007 | (HK)
- Cosmopolitan Magazine, 11/2007 | (HK)
- PolyU Profile, 10/2007 | (HK)
- Ta Kung Pao, 30/09/2007 | (HK)
- Recruit Magazine, 20/09/2007 | (HK)
- AM730, 18/09/2007 | (HK)
- Apple Daily, 18/09/2007 | (HK)
- HK Commercial Daily, 18/09/2007 | (HK)
- HK Daily News, 18/09/2007 | (HK)
- HK Economic Times, 18/09/2007 | (HK)
- HK Headline Daily, 18/09/2007 | (HK)
- Metro Daily, 18/09/2007 | (HK)
- Ming Pao, 18/09/2007 | (HK)

- Oriental Daily, 18/09/2007 | (HK)
- Sing Pao Daily News, 18/09/2007 | (HK)
- Sing Tao Daily, 18/09/2007 | (HK)
- South China Morning Post, 18/09/2007 | (HK)
- Ta Kung Pao, 18/09/2007 | (HK)
- The Sun Newspaper, 18/09/2007 | (HK)
- Wen Wei Po, 18/09/2007 | (HK)
- New Scientist Magazine, 23/08/2007 | (UK)
- DAMn No.11, 05-06/2007 | (Denmark)
- Azure, 05/2007 | (Canada)
- Curve No.19, 04/2007 | (Australia)
- Xpress No.13, 03/2007 | (HK)
- Hong Kong Economic Times, 05/02/2007 | (HK)
- TUDELTA No.4, 01/02/2007 | (Netherlands)
- South China Morning Post, 07/01/2007 | (HK)
- AM730, 04/04/2006 | (HK)
- Apple Daily, 04/04/2006 | (HK)
- Hong Kong Economic Times, 04/04/2006 | (HK)
- HK Headline Daily, 04/04/2006 | (HK)
- Metro Daily, 04/04/2006 | (HK)
- Ming Pao, 04/04/2006 | (HK)
- Oriental Daily, 04/04/2006 | (HK)
- Sing Pao Daily News, 04/04/2006 | (HK)
- Sing Tao Daily, 04/04/2006 | (HK)
- Ta Kung Pao, 04/04/2006 | (HK)
- The Sun Newspaper, 04/04/2006 | (HK)
- Wen Wei Po, 04/04/2006 | (HK)
- South China Morning Post, 03/04/2006 | (HK)

#### Ergonomics

- Hong Kong Industrialist Magazine, 01/07/2005 | (HK)
- Cover Story OEM Ergonomics

### Professional work:

#### Electronic Media

• CNN International, interview, 27/06/2006 | (INT)

#### Design Books

• 50 Sports Wares | Rotovison Design Series 01/07/1999 | ISBN 2-88046-418-8 | (UK)

#### Print Media

Globe and Mail

- $\bullet$  Report on Business, 04/01/2001 | (CAN)
- Design Product News, 01/04/2000 | (CAN)
- Cadkey Magazine, 01/08/1999 | (USA)
- BusinessWeek Magazine, 24/05/1998 | (USA)
- Injection Molding Magazine, 01/07/1999 | (USA)
- Toronto Star, 08/04/1990 | (CAN)