

## HALA ZREIQAT – Curriculum Vitae

University of Sydney

Head: Biomaterials and Tissue Engineering Research Unit  
School of AMME J07, Faculty of Engineering & Bosch Institute  
NSW 2006, AUSTRALIA

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### ACADEMIC POSITIONS

- 2011-2015 Australian National Health and Medical Senior Research Council (NHMRC) Senior Research Fellow; Professor (permanent academic), University of Sydney, Australia; Visiting Academic, the School of Biomedical Engineering, Drexel University, USA; Visiting Professor, American University of Beirut (March – June 2013, September 2014-January 2015) Lebanon; Adjunct Professor, American University of Beirut, (June 2013- September 2014), Lebanon; Guest Visiting Professor, Stomatology College of Shanghai JiaoTong University, Shanghai, China (2013-2015). Guest Visiting Professor, Nanfang Hospital, Southern Medical University, China (2013-2015).
- 2006-2010 NHMRC Research Fellow; (permanent academic), University of Sydney
- 2002-2006 NHMRC Senior Scientist; Head, Bone Biomaterial Unit, Department of Pathology, School of Medical Sciences, University of New South Wales (UNSW), Sydney, Australia
- 2000-2001 NHMRC Senior Scientist; Acting Head, Bone Biomaterial Unit, Department of Pathology, School of Medical Sciences, UNSW
- 1998-2000 Senior Research Officer, Department of Pathology, School of Medical Sciences, UNSW
- 1991-1995 Research Scientist and Laboratory Manager, Department of Pathology, School of Medical Sciences, UNSW
- 1987-1991 Head, Medical Laboratory, Queen Alia Heart Research Institute, King Hussein Medical Centre, Royal Medical Services, Jordanian Armed Forces, Amman, Jordan
- 1986-1987 Scientific Officer, Hope Hospital, Salford, Manchester, UK
- 1982-1986 Scientific Officer, Queen Alia Heart Research Institute, King Hussein Medical Centre, Royal Medical Services, Jordanian Armed Forces, Amman, Jordan

### QUALIFICATIONS / EDUCATION

- PhD** University of New South Wales (Department of Pathology, School of Medical Sciences), Sydney, Australia (awarded May 1998)
- BSc** Jordan University, Amman, Jordan (awarded June 1982)

### HONOURS, AWARDS, FELLOWSHIPS

#### Australian

- Leopold Dintenfass Memorial Award, for Excellence in Research (2012)
- NHMRC Senior Research Fellowship: AUD 570,640 (2011-2015)
- University of Sydney Engineering Deans Research Award (2009)
- Australian Academy of Science Award for research undertaken at Laboratoire de Physiopathologie et Pharmacologie Articulaires, Faculté de Médecine, Université Henri Poincaré, France: AUD 10,500 (2009)
- R Douglas Wright Biomedical Career Development Award (NHMRC): AUD 426,250 (2006-2010)
- Australian Academy of Science Award for research undertaken at Institute of Pathology, Johannes Gutenberg University, Mainz, Germany: AUD 11,000 (2004)
- Australian Postgraduate Research Award (PhD scholarship): AUD 28,000 p.a. (1995-1997)

#### International

- Australia-Harvard Fellowship: AUD 10,000 (2013)
- German Academic Exchange Service (DAAD) award for research undertaken at Saarland University, Germany: AUD 10,000 (2011)
- Invited Guest Professorship, Laboratoire de biomatériaux et polymères de spécialité, Institut Galilée, Université Paris 13: AUD 8,000 (2011)
- Invited Guest Professorship, Laboratoire de biomatériaux et polymères de spécialité, Institut Galilée, Université Paris 13: AUD 8,000 (2007)

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- Invited Guest Professorship, Laboratoire de biomatériaux et polymères de spécialité, Institut Galilée, Université Paris 13: AUD 8,000 (2006)

### EDITORIAL POSITIONS

- Member, Editorial Board, *International Journal of Biomaterials Research and Engineering*
- Member, Editorial Board, *Recent Patents on Biomedical Engineering*
- Associate Editor, *Journal of Biomimetics, Biomaterials, and Tissue Engineering*
- Editorial Board, *Journal of Medical Engineering*.

### INVITED PRESENTATIONS & DELEGATIONS (select list from past 5 years)

#### Keynote speaker

- International Conference on Nanotechnology in Medicine (26-28 February 2014), Royal Free Hospital, University College London, UK, *Partially funded*.
- 8<sup>th</sup> Combined meeting of Orthopaedic Research Societies, 13-16 October 2013, San Servolo, Venice, Italy
- 2013 annual meeting of Orthopaedic Trauma Association of Guangdong Province, 13-15th Sept, 2013 China, *fully funded*.
- Third Middle-East Student Branch Congress (ME-SBC), Lebanon (May-June 2013) – *fully funded*
- 7<sup>th</sup> International Congress of Chinese Orthopaedic Association, Beijing (November 2012) – *fully funded*
- 10<sup>th</sup> European Hip Society Congress, Milano (September 2012) – *fully funded*
- 3<sup>rd</sup> International Conference on 'Strategies in Tissue Engineering', Würzburg, Germany (May 2012) – *fully funded*
- 6<sup>th</sup> International Congress of Chinese Orthopaedic Association, Beijing (December 2011) – *fully funded*
- IOF Regionals - 2nd Asia-Pacific Osteoporosis & Bone Meeting, Gold Coast, Queensland (2011)
- International Conference on Recent Advances in Biomaterials, Chennai, India (December 2010) – *fully funded*
- Tissue Engineering and Regenerative Medicine-Asia Pacific Congress, Sydney (September 2010)
- 23<sup>rd</sup> European Conference on Biomaterials, Tampere, Finland (September 2010) – *partially funded*
- Biomaterials Africa, Pretoria, South Africa (September 2009) – *partially funded*
- 2<sup>nd</sup> World Congress of Regenerative Medicine & Stem Cells, Dalian, China (August 2009) – *partially funded*
- 12<sup>th</sup> Ceramics, Cells and Tissues Meeting: 'Surface-Reactive Biomaterials as Scaffolds and Coatings: Interactions with Cells and Tissues', Faenza, Italy (May 2009) – *partially funded*
- BIT Life Sciences' 1st Annual World Congress of Regenerative Medicine & Stem Cell, Guangzhou, China (December 2008) – *partially funded*
- 68<sup>th</sup> Australian Orthopaedic Association, Tasmania (October 2008)

#### Invited Australian speaker and conference involvement

- Invited Keynote presentation at the ITA-Biomed Bone and Joint-SA Meeting 2011: 'Promoting opportunities for scientific and commercial collaboration in biomedical bone and joint research between Italy and South Australia.' The Royal Institution of Australia, Adelaide SA, Australia, ( February 2011) – *fully funded*
- Invited Keynote speaker at the Australian Health and Medical Research Congress, Melbourne (November 2010)
- Presented at (and organised) 'The Future Of Orthopaedic Research in Australia', Australian Orthopaedic Association Annual Scientific Meeting, Cairns (October 2009)
- Invited Plenary: 3rd Indo-Australian Conference on Biomaterials, Implants, Tissue Regenerative Medicine – in conjunction with the 19th Annual Conference for Biomaterials and Tissue Engineering, Sydney (2009)
- Invited Speaker and Convenor: Sydney University Tissue Engineering Network Symposium (SuTEN), (November 2008)
- Invited Speaker and session Chair on 'Biomaterials for orthopaedic application': 68th Australian Orthopaedic Association Annual Scientific Meeting, Hobart (October 2008)
- New Zealand Orthopaedic Research Society at the AHMRC, Brisbane (November 2008) – *fully funded*

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- CSIRO, North Ryde (September 2008)
- ANZAC Institute for Research, Concord Hospital (July 2008)
- Sydney Tissue Engineering and Matrix Group (STEAM) 13th Symposium (July 2008)
- The Warren Center Yearly Governors Meeting (July 2008)
- Australian and New Zealand Orthopaedic Research Society, Auckland, NZ (October 2007) – *not funded*
- 2007 ASMR National Scientific Conference on ‘Tissue Remodelling: Current Understanding and Future Therapeutic Targets’, Leura, Blue Mountains (November 2007) – *conference registration paid by organizers*
- Australian Rheumatology Association, Sydney (May 2007) – *conference registration paid by organizers*
- 17th Annual Scientific Meeting of the Australian and New Zealand Bone and Mineral Society, Queenstown NZ (September 2007) – *not funded*
- University of Sydney, Faculty of Medicine Health Research Conference, Leura, Blue Mountains (November 2006) – *conference registration paid by organizers*
- International Society for Fracture Repair, Adelaide (2006) – *conference expenses, airfare and accommodation paid by organizers*
- Invited Plenary Speaker: Australian and New Zealand Orthopaedic Research Society conference, Perth, (October 2005) – *conference expenses, airfare and accommodation paid by organizers*
- Australian Health and Medical Research Congress, Convention Centre, Sydney (November 2004)
- ANZAC Institute for Research, Concord Hospital (October 2004)
- Institute for Molecular Bioscience, The University of Queensland, Brisbane Qld (November 2003)
- Bone and Joint Research Group, Department of Pathology, University of Adelaide (1998)

### Speaker

- Deputy Synthes, Biomaterials Division, July 19<sup>th</sup> 2013.
- Hong Kong University, Department of Orthopaedics & Traumatology, (November 2012) – *fully funded*
- Faculty of Medicine, University of Pennsylvania (May 2012)
- Shanghai-Sydney, World Expo (August 2010)
- New Zealand Orthopaedic Research Society at the AHMRC, Brisbane (November 2008) – *fully funded*
- Biomedical Engineering workshop, Masdar, Abu-Dhabi (January 2011) – *fully funded*

### Talks and seminars

- Translational Research in Orthopaedic Surgery, University of Pennsylvania – *local expenses covered by U PENN*
- During a visit to Germany (May-July 2011) sponsored by the German Academic Exchange Service (DAAD), I was invited to deliver seminars at: Saarland University Federal Institute for Materials Research and Testing (BAM), Berlin; University of Erlangen-Nuremberg; Wurtzburg University (travel expenses from Berlin were fully funded); University of Münster (travel expenses from Berlin were fully funded).
- Biomedical Engineering, Tufts University (July 2011). Here I met with Professor Kaplan, who is now co-supervising one of my PhD students and hosting another under the Australian Endeavour Research Fellowship for 6 months to conduct a collaborative research project
- Fu Foundation School of Engineering and Applied Science, Columbia University (July 2011)
- School of Biomedical Engineering, Science & Health Systems, Drexel University (July 2011) – *partially funded*
- Children’s Hospital of Philadelphia, University of Pennsylvania (July 2011)
- Rizzoli Orthopaedic Institute, Bologna, Italy; and the Division of Genetics and Cell Biology, San Raffaele Scientific Institute and Università Vita-Salute San Raffaele, Milano, Italy (July 2011)
- Dept of Developmental Biology, Harvard School of Dental Medicine (December 2010) – *partially funded*
- School of Biomedical Engineering, Drexel University, Drexel University (November 2010) – *partially funded*
- Shanghai Institute of Ceramics, Chinese Academy of Sciences (December 2008) – *partially funded*
- Biomedical Engineering Dept, Technion, Israel Institute of Technology, Haifa, Israel (2008) – *fully funded*

### Delegations- member of official delegations:

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- University of Sydney delegation to visit key universities in the Middle East: American University of Beirut, Lebanon and University of Jordan and Jordan University of Science and Technology (May 2012)
- University of Sydney delegation to visit key universities in the Middle East: United Arab Emirates, Abu-Dhabi (April 2011)
- University of Sydney delegation to visit key universities in the Middle East (May 2010) – *fully funded*
- Australian Delegation for Workshop on New Biomedical Devices, New Delhi, India (March 2009), jointly sponsored by the Australian and Indian governments – *fully funded*

### COMPETITIVE RESEARCH FUNDING

*I have obtained total research funding of AUD 4.5 M. Listed below are nationally competitive grants on which I am/was Lead Chief Investigator in the past 5 years.*

- Rebecca Cooper Medical Foundation Grant: **Zreiqat H**, 'Microstructural Design Strategies for Repairing Traumatic Skeletal Injuries', AUD 21,000 (2013)
- NHMRC Senior Research Fellowship: **Zreiqat H**, 'Development of novel resorbable biomaterials for regeneration of human tissue', AUD 575,000 (2011-2015)
- NHMRC Project Grant: **Zreiqat H**, Dunstan C, 'Harnessing the physiological effects of strontium and zinc to produce novel biomaterials for orthopaedic applications', AUD 539,500 (2010-2012)
- DVC International/IPDF Grant: Lu Z, Wang G, **Zreiqat H**, 'Programming stem cells for bone, blood, and cartilage regeneration: current state and future prospective' AUD 18,000 (2012)
- Australian Orthopaedic Association: **Zreiqat H**, Sonnabend D, Dunstan C, 'Novel coatings for orthopaedic application', AUD 58,799 (2010-11)
- Rebecca Cooper Foundation Grant: **Zreiqat H**, 'Microstructural Design Strategies for Repairing Traumatic Skeletal Injuries', AUD 21,000 (2012)
- National Health and Medical Research Council R Douglas Wright Biomedical Career Development Award: **H Zreiqat**, AUD 426,250 (2006–10)
- Rebecca Cooper Research Foundation Grant: **Zreiqat H**, 'Novel engineered nano-composite scaffolds for bone regeneration', AUD 22,000 (2010)
- International Programme Development Funds, **Zreiqat H**, funds to hold the 3rd International Sydney Tissue Engineering Symposium in 2010 in Sydney, AUD 20,000 (2009)
- Australian Research Council Linkage Grant: **Zreiqat H**, Pivonka P, 'Scaffolds for bone tissue regeneration and use in orthopaedic applications'. Industry partner: Vesobu Pty Ltd. AUD 804,500 (2009-2012)
- NHMRC Project Grant: **Zreiqat H**, Dunstan C, 'Novel coatings for orthopaedic implants', AUD 430,000 (2009-11)
- Australian Orthopaedic Association: **Zreiqat H**, Little DG, Dunstan C, 'Novel scaffolds for repairing bone defects', AUD 58,658 (2008-09)
- Rebecca Cooper Research Foundation Grant: **Zreiqat H**, 'Developing novel scaffolds for osteochondral defects and orthopaedic prosthetic coatings for bone tissue regeneration and implant osseointegration', AUD 20,000 (2008)
- Australian Research Council Discovery Project: **Zreiqat H**, Haynes DR, AUD 555,000 (2005-2007)
- Rebecca Cooper Research Foundation Equipment Grant: **Zreiqat H**, 'Developing better treatment and novel prosthetic implants for joint replacement damaged due to arthritis, AUD 20,000 (2007)
- Australian Research Council Discovery Project: **Zreiqat H**, Haynes DR, AUD 555,000 (2005-2007)
- National Health and Medical Research Council Project Grant: **Zreiqat H**, Haynes DR, AUD 470,000 (2004–06)
- National health and Medical Research Council Project Grant: **Zreiqat H**, Howlett CR, Haynes DR, AUD 250,000 (2000–02)

### OTHERS:

- University of Sydney NHMRC Equipment Grant (AUD \$74,750, 2013) Des Richardson, Richard Scolyer, Judy Black, Gary Halliday, Jillian Kril, MacDonald Christie, **Hala Zreiqat**, Michael Murray, Barry Slobedman, Matthew Naylor, Janette Burgess, Jamie Triccas, Rebecca Mason, Steve Chadban, Robert Vandenberg, Valery Combes, Frank Lovicu, Sue McLennan, Danuta Kalinowski, Alexandra Sharland, Daniel Johnstone, Jane Hanrahan, Alaina Ammit, Paul Groundwater, Elena Bagley, Katie Dixon, Guy Lyons, Fanfan Zhou, David Lovejoy, Zufu Lu, Ling Zhu, Dai Hibbs, Brian Morris, Claire Goldsbury, Peter Lay, Maria Byrne, Paul Witting, Michael Buckland, Zaklina Kovacevic, Qihan Dong, Stephen Assinder, Auriol Purdie, Daohai Zhang, Yuekun

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Ju, Rachel Codd, Darius Lane, Dong Fu, Thomas Owens, Stuart Fraser, Bob Bao, Greg Sutherland, Donna Lai, Michael Huang, Margot Day, Aaron Camp, Patric Jansson, Lou Rendina, Brett Hambly, Richard Whittington, Cris dos Remedios, Michael Boyer, Chris Murphy. "QX100 Droplet Digital PCR System for Shared Use at the Multi-User Molecular Biology Core Facility".

- University of Sydney NHMRC Equipment Grant (AUD \$72,876, 2012) : Des Richardson, Richard Scolyer, Roland Stocker, Wolfgang Weininger , Judy Black, David Allen, Michael Murray, Rebecca Mason, Stephen Twigg, Nick King, Lisa Horvath, Frank Lovicu, Cheok Soon Lee, Gary Halliday, David Lovejoy, Douglas Joshua, Alexandra Sharland, Basil Roufogalis, Brett Hambly, Brian Morris, Bob Bao, Alex Bishop, Dai (David) Hibbs, Darius Lane, Fanfan Zhou, Jane Hanrahan, Katie Dixon, Lou Rendina, Maria Byrne, Matthew Naylor, Nicholas Cole, Patric Jansson, Qihan Dong, Rachel Codd, Richard Payne, Stephen Assinder, Steve Chadban, Stuart Fraser, Sue McLennan, Yohan Suryo Rahmanto, Donna Lai, Yu Yu, Yuekun Ju, Michael Buckland, Zaklina Kovacevic , Federica Saletta, **Hala Zreiqat**, Danuta Kalinowski, Paul Groundwater, John Simes , Daohai Zhang, Michael Boyer, Chris Murp, 'GeneAtlas Personal Microarray System for Shared Use at the Multi-User Molecular Biology Core Facility',
- National health and Medical Research Council Equipment Grant (AUD \$200,000, 2011): Halliday, G, Hambley T, **Zreiqat H**, Richardson R, Holst J, Rasko J, Byrne S, Dong Q, Hong A, Lyons G, 'A Small Animal Bioimager for Monitoring Cells and Molecules in vivo',
- National Health and Medical Research Council Equipment Grant: Dehghani F, Weiss T, Bilek M, **Zreiqat H**, Dunstan CR, Chrazonowski W, Roohanizadeh R. 'Instron Machine', AUD 75,000 (2011)
- National Health and Medical Research Council Equipment Grant: Richardson DR, Stocker R. Halliday, G.M., Hunt N.H., Vandenberg R, Twigg S, Black J.L., Bishop G.A., King, N.J.C., Allen D.G., Mason R.S., Sharland, A.F., Lee C.S., Grau G. E., Chan-Ling T, Ju Y.K., Lovicu F. J., Joshua D.E., McLennan S.V., Dampney R.A.L, Bao S., **Zreiqat H.**, Chadban S.J., Ho P.J., Burgess J.K., Wu H., Ryan R.M., Lovejoy D.B., Hambly B.D., Codd R., Reichardt JK., 'A Large-Scale Recombinant Protein Production System for the New Multi-User PC2 Molecular Biology Facility in the Blackburn-Bosch Precinct', AUD 74,907 (2008)
- Cancer Institute of NSW Research Equipment Grant: Richardson DR, Boyer M, Weninger W, Scolyer R, Halliday GM, Lee CS, Hambly T, Murray M, Lay P, Mason RS  
Als: Joshua D, Murphy C, McLachlan A, King NJC, Dong Q, Kumar N, dos Remedios C, Rendina L, Davies M, Assinder SJ, Kovacevic Z, **Zreiqat H**, Vemulpad S, Bao S, Yu Y, Bishop GA, Vandenberg R, Zhang D, Groundwater P, Hawkins C, Kalinowski D, De Souza P, Lane D, Ryan R, Hambly B, Jansson P, Moscato P, Saletta F, Fraser S, Sharland A, Lovejoy D, Codd R, Byrne M, Jamie J, Kench J, Suryo Rahmanto Y, Lai D., 'Seahorse Extracellular Flux (XF) Analyzer for the Multi-Disciplinary Sydney Cancer Research Core Facility,' AUD 315,000 (1 July 2011 to 30 June 2012).
- NHMRC Equipment Grant: DR Richardson, Stocker R. Halliday, G.M., Hunt N.H., Vandenberg R, Twigg S, Black J.L., Bishop G.A., King, N.J.C., Allen D.G., Mason R.S., Sharland, A.F., Lee C.S., Grau G. E., Chan-Ling T, Ju Y.K., Lovicu F. J., Joshua D.E., McLennan S.V., Dampney R.A.L, Bao S., **Zreiqat H.**, Chadban S.J., Ho P.J., Burgess J.K., Wu H., Ryan R.M., Lovejoy D.B., Hambly B.D., Codd R., Reichardt JK., 'A Large-Scale Recombinant Protein Production System for the New Multi-User PC2 Molecular Biology Facility in the Blackburn-Bosch Precinct', AUD 74,907 (2008)
- University of Sydney Major Equipment Grant: Dehghani F, **Zreiqat H**, Coster H, Weis T., 'Liquid Chromatography Mass Spectrometry (LCMS)', AUD 95,000 (2007)
- National Health and Medical Research Council Equipment Grant: Richardson DR, Halliday, G.M., Twigg, S., Yue, D., King, N.J.C., Sharland, A.F., Bishop, A.G., Stocker, R., Ho, P.J., **H Zreiqat**, Bao, B., McLennan, S.V., Matsumoto, I., Hambly, B.D., Lee, C.S., Rose, B. and Harbour, C., 'Rotor-gene 6000 real time PCR Machine', AUD 73,950 (2007).
- NHMRC Equipment Grant: Richardson, DR, Halliday, G.M., Twigg, S., Yue, D., King, N.J.C., Sharland, A.F., Bishop, A.G., Stocker, R., Ho, P.J., **Zreiqat, H.**, Bao, B., McLennan, S.V., Matsumoto, I., Hambly, B.D., Lee, C.S., Rose, B. and Harbour, C. 'Rotor-gene 6000 real time PCR Machine', AUD 73,950 (2007)

## PATENTS

*I have filed 6 provisional patents in Australia, 5 as lead inventor. In the last 5 years these include:*

- 2013000498, 'A bioactive material and method of forming same.' Filed as a provisional Patent Application, 14 May 2013. Applicant: The University of Sydney. Inventors: **Zreiqat H**, Roohani-Esfahani S, Lu Zufu, Li J-J.
- AU2013900781, 'Nacre-like composites, methods of synthesis and methods of use.' Filed as a provisional Patent Application, 7 March 2013. Applicant: The University of Sydney. Inventors: Davies B, **Zreiqat H**,

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Minett A.

- 2011902160, BIOCOMPATIBLE MATERIAL AND USES THEREOF. Filed as a provisional Patent Application, October 2011. Applicant: The University of Sydney. Inventors: **Zreiqat H**, Roohani-Esfahani S, Dunstan C, Li J-J.
- 2007905843, BIOCOMPATIBLE MATERIAL AND USES THEREOF. Filed as a provisional Patent Application, 24 October 2007. Applicant: The University of Sydney. Inventors: **Zreiqat H**, Wu C, Ramaswamy Y.
- 2008903557, BIOCOMPATIBLE MATERIAL AND USES THEREOF. Filed as a provisional Patent Application, 10 July 2008. Applicant: The University of Sydney. Inventors: **Zreiqat H**, Wu C, Dunstan C.
- 2005/00168, Use of Calgranulin A and B in the Promotion and Inhibition of Mineralized Tissue Formation". Filed 24 October 2005. Applicant: The University of NSW. Inventors: **Zreiqat H** and Geczy CL. Lapsed.

### MENTORING, TRAINING, SUPERVISION, TEACHING (past 5 years)

#### Mentoring

I place considerable emphasis in my lab on the training and mentoring of early career post docs and of PhD students. I have mentored 6 postdoctoral research fellows (including 2 Endeavour International Fellows): **Dr. Zufu Lu** was awarded an NHMRC Early Career Fellowship (2011-2014) to continue his research under my supervision; **Dr Chengtie Wu** was awarded the Humboldt Fellowship (2009) and has since been appointed Professor at the Chinese Academy of Science, Shanghai, supported by the talent program of the Chinese government; **Dr Yogambha Ramaswamy** was awarded the UNSW Vice Chancellor Fellowship (2011-2013) and the Early Career Fellowship (2012-20115). I have also mentored 3 international visiting research students. I am a mentor for postdoctoral researchers at the University of Sydney: Dr Sarah Tarran, Westmead Hospital (2011); Dr Christopher Vidal, Department of Medicine, Sydney Medical School Nepean (2012), Eman Habib Nafea, MSc Pharm, Biomedical Engineering, University of New South Wales (2012).

#### Postgraduate Supervision

I have supervised 7 PhDs (1 completed), co-supervised 3 PhDs (3 completed). My current PhD students have been highly awarded: **Mr. Young Jung No**, Australian postgraduate award scholarship (commenced February 2013). **Ms Jiao-Jiao-Li** won the University Medal and the Vice-Chancellor's Research Scholarship (2010) and an Endeavour Research Fellowship to Tufts University; School of AMME Best Student Presentation and the Best Student Presentation in the area of Biomedical Engineering (2012); Best Postgraduate Poster in the field of Biomedical Engineering awarded by Shelston IP for poster presentation at the Research Conversazione (2012); Promega Award for Outstanding Oral Presentation by a Postgraduate Research Student at the XIIth Bosch Young Investigators Symposium (2012). **Mr Roohani Esfahani** won the University of Sydney's Sydnovate 1st Prize for Excellence in Innovation 2011; the WFRIM Young Investigator Award 2011, TERMIS, USA; and was a Finalist in the Engineering Award Australia 2011; School of AMME Research Excellence Award 2012. **Ms Annika Van Hummel** won a University Postgraduate Award; an Osteoarthritis Research Society International Scholarship; an Endeavour Award 2011 for a three-month collaborative project at Harvard School of Dental Medicine in 2012; and a Boehringer Ingelheim Fonds Travel Grant for a three-month collaborative project at Saarland University, Germany.

#### Undergraduate Supervision

I have supervised 30 Honours students

##### 2013:

1. Mischa Jurkiewicz
2. Ningyi Xu

##### 2012:

3. Samuel Tam: Watermark Intellectual Asset Management Seminar Prize – Best seminar in Honors Thesis in Biomedical Engineering
4. Andrea Ying Lam: Watermark Intellectual Asset Management Seminar Prize – Best Honors Thesis in Biomedical Engineering
5. Christel Birkmann-Little
6. William Patrick Crowley
7. Young Jung NO
8. John Lemerlie

##### 2011:

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9. Benjamin Rhys: Watermark IP Biomedical Engineering Prize – Best Honors Thesis in Biomedical Engineering
10. Mohan Riche Rangan
11. Selwyn Xuning
12. Ken Yu

### 2010:

13. Milanjot Singh Assi
14. Michael Georgamlis
15. Rebecca Moses
16. Chich Yi Yang

### 2009:

17. Jiao-Jiao Li: Thesis award for 2010 (6-Degrees of Freedom Award) from the Sydney Orthopaedic Research
18. Nicolas Grandjean-Thomsen
19. Dominic Goh
20. Angelo Pashalidis
21. Beenish Rehmanjan

### 2008:

22. Andrew Howard: 1st prize for poster presentation at AMME Research Conversazione & Sydnovate innovative prize
23. David Gale
24. William Lai
25. Tina Chan
26. Micheal Van
27. Deepika Nandakumar

### 2007:

28. Annika Van Hummel, 1st price for poster presentation at AMME Research Conversazione
29. Joy Wood: 1st prize for thesis presentation; 2nd prize for poster presentation at AMME Research Conversazione

### 2006:

30. Andika Soeparto
31. Danniele Kwik

### Overseas undergraduate & postgraduate supervision:

2011-2012: Pincha Torkittikul, Chiangmai University, Thailand

2010-2011: Kai Yuen, Wong, Imperial College of Science, Technology and Medicine, United Kingdom

2009: Dishant Japra, (M. Tech), Indian Institute of Technology (IIT), Bombay

### Established international collaborations

- Professor Vicki Rosen, Department Head and Professor of Developmental Biology, Harvard University, USA. 'BMP signaling in synthetic biomaterials'. *Resulted in two successful Australia-Harvard scholarships (2012 for Prof Rosen and 2013 for A/Prof Zreiqat)*
- Professor David Kaplan, Tufts University. 'Biphasic scaffolds for long-term osteochondral defect repair'. *Resulted in [32] and a pending ARC-DP application (Kaplan as a PI).*
- Professor Xinquan, Jiao Tong University, China. Oral Bioengineering Lab, Shanghai Research Institute of Stomatology, Ninth People's Hospital Affiliated to Shanghai Jiao Tong University, School of Medicine, Shanghai Key Laboratory of Stomatology, Shanghai 200011, China. 'In vivo and in vitro validation of novel modified Ti-6Al-4V surfaces.' *Resulted in [2] and a Guest visiting Prof appointment; a pending NHMRC project grant application (With Prof Jiang as a CIC)*
- Assistant Professor Sarah Heilshorn, Department of Materials Science & Engineering, Stanford University, USA. 'Developing minimally-invasive delivery method for potential use in spine fusion and osteoporotic fracture'. *Commenced 2012.*
- Prof Xuanyong Liu, Chinese Academy of Science, Shanghai. 'Plasma spray coating for orthopaedic implant applications'. *Resulted in [4, 16, 19, 30].*

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- Prof Gundula Schulze-Tanzil, Charité-Universitätsmedizin Berlin, Campus Benjamin Franklin Klinik für Orthopädische, Unfall- und Wiederherstellungschirurgie, Germany. *Resulted in [5, 43, 45, 63, 76].*
- Associate Professor Guanfeng Yao, Department of Orthopaedics, the Second Affiliated Hospital, Shantou, University Medical College, Shantou, Guangdong, China. 'In vivo evaluation of novel synthetic scaffolds in lumbar spine fusion'. *Commenced 2013.*
- Professor Dmitry Gabrilovich, Robert Rothman Endowed Chair in Cancer Research, H. Lee Moffitt Cancer Center and Research Institute, University of South Florida, MRC 2067. 'Skeletal phenotype in S100A9 transgenic mice'. *Commenced 2012.*
- Professor Thomas Schaer, Director, Comparative Orthopaedic Research Laboratory, Department of Clinical Studies New Bolton Center, School of Veterinary Medicine, University of Pennsylvania, USA. 'In vivo performance of synthetic material in an orthopaedically relevant large animal model'. *Commenced 2012; manuscript in preparation.*
- Prof. R. Johannes, Director, Institute of Experimental Dermatology, Westphalian Wilhelms University, Muenster, Germany. 'S100 protein implications in rheumatoid arthritis and osteoarthritis'. *Resulted in [15, 23].*

### Established national Collaborations

- Prof C Little, Director, Raymond Purves Bone and Joint Research Labs, Royal North Shore Hospital, Sydney. 'Role of S100A8/S100A9 proteins in cartilage degeneration in osteoarthritis'. *Resulted in [15, 23] and a shared PhD student (Ms Annika Van Hummel) to submit December 2014.*
- A/Prof Colin Dunstan, University of Sydney. 'Assessment of bone quality when in contact with biomaterials'.
- Associate Professor Lars Ittner, Laboratory for Translational Neurodegeneration, The Brain & Mind Research Institute, BMRI, University of Sydney. 'In vivo signaling pathways involved in bone regeneration using synthetic scaffolds'. *Commenced 2013; resulted in shared honours student*
- Dr. Peter Pivonka, Faculty of Engineering, University of Western Australia. 'Use of computational modelling to estimate stiffness, strength and dissolution of the implants'. *Resulted in an ARC-Linkage grant.*
- Associate Professor Andrew Minett, School of Chemical and Biomolecular Engineering, Faculty of Engineering, University of Sydney. The collaboration 'focuses on creating functional nanomaterial composites for manipulating the material – biology interface. This is achieved through the incorporation of nanomaterials both into or onto hierarchical structures resulting in stronger composite materials with functional, intelligent surfaces'. *Commenced 2012; resulted in a joint patent submission; submission of an invited review article by Newman, A. Minett, R. Ellis-Behnke, H. Zreiqat, 'Carbon Nanotubes and Bone Tissue Engineering' to Nanomedicine: Nanotechnology, Biology, and Medicine.*

### OVERSEAS ACADEMIC VISITORS

- Associate Professor Xiaobing Zhao, Changzhou University, China (2012-2013)
- Professor Vicki Rosen, Harvard University – sponsored by an Australia-Harvard Fellowship (2012)
- Professor Jeremy Mao, Columbia U, USA, University of Sydney International Visiting Fellowship (2008).

### TEACHING

I created units of study using a new teaching style which includes invited lectures from researchers at the forefront in their fields to provide insights on the most recent advances.

I have instigated, designed, coordinated and taught courses for undergraduates (Principles of Tissue Engineering, AMME4971, 35-40 students) and postgraduates (Applied Tissue Engineering, AMME5971, 10 Masters students) (2006-present). Both courses are now core subjects.

I have instigated, designed, coordinated and taught course on (*Tissue engineering dn turning discoveries into clinical products*) for undergraduates, post graduates (Masters and PhD) for Engineering and Science students at the American University of Beirut (AUB) (EECE 798A, MECH 798J), total 22 students (Medicine and Engineering).

### PROFESSIONAL ACTIVITIES

I am currently involved with several professional national and international societies or research organizations. I have actively participated in their various activities, including supporting society affairs and local meetings, attending and presenting my work at their annual scientific/faculty meetings:

- Advisory Board/Faculty of the Tissue Engineering and Regenerative Medicine Asia Pacific (TERMIS-AP) 2013 Congress, Shanghai, China (September 2013)
- Advisor World Orthopaedic Alliance (WOA) (October 2012-present)



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- I co-organized workshops in both Lebanon and Jordan (September 2012) – *fully funded by the University of Sydney*
- Advisory Board/Faculty of the TERMIS 2012 World Congress, Vienna, Austria (September 2012)
- External advisor on the project: ‘Bioactive materials, cell and tissue printing: New therapeutic approaches for organ level tissue engineering and regenerative medicine’, University of Erlangen, Germany (2012)
- Co-convenor (with Prof Dennis Discher, University of Pennsylvania), Sydney University Tissue Engineering Network’s (SuTEN) international Symposium (August 2012)
- President, Australian and New Zealand Orthopaedic Research Society (2010-2012)
- Symposium co-organizer (with Professor Gordana Vunjak-Novakovic, Columbia University), TERMIS-Noth America Congress, Orlando, US (December 2010)
- Co-Chair, Tissue Engineering and Regenerative Medicine – Asia Pacific Conference, Sydney (September 2010)
- Convenor, (with Professor Gordana Vunjak-Novakovic, Columbia University), SuTEN International Symposium (November 2010)
- Member, Scientific Committee, Australian Health & Medical Research Congress, Melbourne (November 2010)
- Co-convenor, Scientific Research Meeting, Australian Orthopaedic Association Conference, Cairns (2010)
- Member, Middle East & North Africa (MENA) Expert Group (since 2008)
- Organizer, Australian and New Zealand Orthopedic Research Society meeting at the Australian Health & Medical Research Congress (November 2009)
- Member, Teaching and Learning Committee, School of AMME, Faculty of Engineering (2007-current)
- Member, Scientific Programming Committee, Australian Society for Medical Research National Scientific Conference, ‘Tissue Remodelling: Current Understanding and Future Therapeutic Targets’ (2007)
- Panel member, Future Research Leaders programme, University of Sydney (June 2010)
- Upon joining the University of Sydney in 2006, I established the Tissue Engineering and Biomaterials Research Unit at the Faculty of Engineering and founded the Tissue Engineering Network (SuTEN) (2006-present), which facilitates collaborations/exchanges between professors in the US, Europe, China and Australia. Partner universities include Harvard, Tufts, Stanford, Columbia, Hong Kong U. I am the convenor of 4 biannual international symposia which now include prestigious partner institutions: Harvard U, Columbia U, Stanford U, Tufts U, Yale U, U PENN and Hong Kong U.
- I co-founded the Sydney Basic Bone Group in 2002 and am a co-convenor (2002-present). This group is a collaboration between clinicians and researchers across hospitals and universities in Sydney.

### SERVICE TO THE COMMUNITY

- In the Middle East I have been involved in various education promotion activities:
  - Gave talks at Jordanian high schools (King’s Academy, and International Academy Amman) to encourage students to consider enrolling in Australian universities, to enlighten them about the benefits of medical research, and to promote research conducted at the University of Sydney, in particular (2010 and 2011). I received excellent feedback for these talks each time.
  - Met with the director of AusAid to discuss ways to promote Australian education in the region.
  - Met with the Australian Ambassador in Jordan and identified ways to work together to promote Australian education in the region in order to recruit undergraduate students to the University of Sydney specifically and to Australian institutions in general. In turn, at his invitation, I flew to Jordan (self-funded) for a dinner he gave for the (24) presidents of Jordan’s universities, as I could see the future benefit for the Australian university sector.
  - Met with the University of Sydney’s only representative in the Middle East to discuss ways in which to increase recruitment of undergraduate students to the University of Sydney.
- As a member of the Australian Orthopaedic Association, I help raise awareness nationally and internationally amongst orthopaedic surgeons and other health professionals about developments in orthopaedics research. For example, I initiated and organized an international symposium in Jordan in June 2008 to raise awareness of osteoarthritis and osteoporosis and their effect on women’s health in the Middle East.

### MEDIA

- Vision Australia Radio-Today in Focus (2012)
- Interview by the Campus Review (2012)

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- Catalyst (ABC TV) broadcasted a segment on my work in developing scaffolds for bone regeneration which was aired on 16 June 2011
- I have given radio interviews (ABC) (November 2008), relating to different aspects of Tissue Engineering research and appeared in Sydney University's newspaper (UniNews, Dec 2008) and in the Engineering Sydney Faculty and Alumni Newsletter (Feb 2009). Our work has also been highlighted on the ABC.

### ASSESSOR FOR NATIONAL AND INTERNATIONAL FUNDING BODIES

I am a regular assessor for the following prestigious bodies and publications:

- National Health and Medical Research Council Project Grants, Australia
- Australian Research Council Discovery and Linkage Project Grants
- United States-Israel Binational Science Foundation (2011-present)
- Health Research Board (2012-present)
- Rheumasearch funding agency (Holland-present)
- 2007-OZ Readers ARC Discovery Project (2009-present)
- The Portuguese Foundation for Science and Technology (FCT) (2011-present)
- Netherlands Organisation for Scientific Research (2013-present)

### PUBLICATIONS

#### Papers in refereed international journals

*Note re order of authorship: in the biomedicine field the last author is the senior corresponding author.*

1. Zhao, Xiaobing; Wang, Guocheng; Zheng, Hai; Lu, Zufu; Zhong, Xia; Chen, Xingbao; **Zreiqat, Hala**, Delicate refinement of surface nanotopography by adjusting TiO<sub>2</sub> coating chemical composition for enhanced interfacial biocompatibility, *ACS Applied Materials & Interfaces*, Accepted (August 6<sup>th</sup> 2013). (IF 5.008).
2. Seyed-Iman Roohani-Esfahani, Yongjuan Chen, Jeffrey Shi, **Hala Zreiqat** Fabrication and characterization of a new, strong and bioactive ceramic scaffold for bone regeneration, *Materials Letters*, 107:378–381, (2013), (IF 2.322).
3. Newman O, Minett A, Ellis-Behnke R, **Zreiqat H**, Carbon Nanotubes: their Potential and Pitfalls for Bone Tissue Regeneration and Engineering, *Nanomedicine*. 2013 Jun 12. pii: S1549-9634(13)00269-4, (IF 6.930).
4. Li, JJ; Gil, Seok E, Hayden R; Li C; Roohani-Esfahani SI; Kaplan D; **Zreiqat, H**. Multiple silk coatings on biphasic calcium phosphate scaffolds: Effect on physical and mechanical properties, and in vitro osteogenic response of human mesenchymal stem cells. Accepted (28.05.2013), *Biomacromolecules* (2013).
5. Wang G, Lu Z, Zhao X, Kondyurin A, **Zreiqat H**. Ordered HAp nanoarchitecture formed on HAp/TCP bioceramics by 'nanocarving' and mineralization deposition and its potential use for guiding cell behaviors. *J. Mater. Chem. B*, 1, 2455-2462 (2013). (**selected for cover photo**) (IF 6.101)
6. S.I. Roohani-Esfahani, C.R. Dunstan, J.J. Li, Zufu Lu, B. Davies, S. Pearce, J. Field, R. Williams, **H. Zreiqat**. Unique microstructural design of ceramic scaffolds for bone regeneration under load, *Acta Biomaterialia*, Jun;9(6):7014-24 (2013).
7. Lu ZuFu, Wang G, Dunstan CR, Chen Y, Lu WYR, Davies B, **Zreiqat H**. Activation and Promotion of Adipose Tissue-derived Mesenchymal Stem Cells by Tumour Necrosis Factor-Alpha Preconditioning for Bone Tissue Engineering, *Journal of Cellular Physiology*, 228(8):1737-44. (2013)
8. Zhang W, Wang G, Liu Y, Zhao X, Zou D, Zhu C, Jin Y, Huang Q, Sun J, Liu X, Jiang X, **Zreiqat H**, The synergistic effect of hierarchical micro/nano-topography and bioactive ions for enhanced Osseointegration, *Biomaterials*, 34(13), 3184 - 3195 (2013).
9. K. El Sayed, U. Marzahn, T. John, M. Hoyer, **H. Zreiqat**, A. Witthuhn, B. Kohl, A. Haisch, G. Schulze-Tanzil. PGA-associated heterotopic chondrocyte cocultures: implications of nasoseptal and auricular chondrocytes in articular cartilage repair. *J Tissue Eng Regen Med*. 7(1):61-72 (2013)
10. Waterhouse A, Wise SG, Yin Y, Wu B, James B, **Zreiqat H**, McKenzie DR, Bao S, Weiss AS, Ng MK, Bilek MM, In vivo biocompatibility of a plasma-activated, coronary stent coating, *Biomaterials*, 33(32):7984-92. (2012).
11. Wang G, Lu Z, Xie K, Lu W, S.I. Roohani-Esfahani, Kondyurin A, **Zreiqat H**, Facile method to in-situ formation of hydroxyapatite single crystal architecture for enhanced osteoblast adhesion, *Journal of Material Chemistry*, 22: 19081-19087, (2012).
12. S.I. Roohani-Esfahani, C Dunstan, B Davies, S Pearce, R Williams, **H Zreiqat**. Repairing a Critical-sized Bone Defect with Highly Porous Modified and Unmodified Baghdadite Scaffolds, *Acta Biomaterialia*, 8(11):4162-72, (2012).
13. Zhong X, Lu Z, Valtchev P, Wei H, **Zreiqat H**, Dehghani F, Surface modification of poly(propylene carbonate) by aminolysis and layer-by-layer assembly for enhanced cytocompatibility, *Colloids Surface Biointerface*, 1;93:75-84, (2012).

14. S.I Roohani-Esfahani, S. Nouri-Khorasani, ZuFu Lu, R. Appleyard, **H. Zreiqat**. Modification of Porous Calcium Phosphate Surfaces with Different Geometries of Bioactive Glass Nanoparticles. *Materials Science and Engineering. C*, 32: 4: 830–839, (2012).
15. Lu Z, Wang G, Dunstan CR, **Zreiqat H**, Short-term Exposure to Tumour Necrosis Factor-alpha Enables Human Osteoblasts to Direct Adipose Tissue-Derived Mesenchymal Stem Cells into Osteogenic Differentiation. *Stem Cell and Development*, 21(13):2420-9, (2012).
16. ZF Lu, SI Roohani-Esfahani, GC Wang, **H Zreiqat**. Bone Biomimetic Microenvironment Induces Osteogenic Differentiation of Adipose Tissue-Derived Mesenchymal Stem Cells *Nanomedicine*. 8(4):507-15, (2012).
17. GC Wang, ZF Lu, Dwarto D, **H Zreiqat**. Porous scaffolds with tailored reactivity modulate in-vitro osteoblast responses, *Materials Science and Engineering C*, 32(7):1818–1826, (2012)
18. S.I. Roohani-Esfahani, Z.F. Lu, J.J. Li, R. Ellis-Behnke, D.L. Kaplan, **H. Zreiqat**, Effect of self-assembled nanofibrous silk/polycaprolactone layer on the osteoconductivity and mechanical properties of biphasic calcium phosphate scaffolds, *Acta Biomater*, 8(1):302-12, (2012).
19. van Hummel, A, Little, C, Vogl, T, Roth, J, **Zreiqat, H**. S100A8 AND S100A9 ACT AS 'PRIMERS' OF A CATABOLIC RESPONSE IN CHONDROCYTES BUT ADDITIONAL SIGNALS ARE REQUIRED TO ACTIVATE CARTILAGE DEGRADATION, Osteoarthritis and Cartilage, 20 S30-S31 (2012).
20. Wang G, Lu Z, Liu X, Zhou X, Ding C, **Zreiqat H**. Nanostructured glass-ceramic coatings for orthopaedic applications. *J Royal Society Interface*. 8:1192-203, (2011).
21. Roohani-Esfahani SI; Nouri-Khorasani S; Lu Z; Appleyard R; **Zreiqat H**. Effects of Bioactive Glass Nanoparticles on Mechanical and Biological Behavior of Composite Coated Scaffolds. *Acta Biomater*, 7(3):1307-18, (2011).
22. Lu ZF, Roohani-Esfahani SI, Kwok Philip Chi Lip, **Zreiqat H**, Osteoblasts on rod shaped hydroxyapatite nanoparticles incorporated PCL film provide an optimal osteogenic niche for stem cell differentiation, *Tissue Eng Part A*. 2011 Jun;17(11-12):1651-61, (2011).
23. Wang G, Liu X, **Zreiqat H**, Ding C. Enhanced effects of nano-scale topography on the bioactivity and osteoblast behaviors of micron rough ZrO<sub>2</sub>, *Colloids and Surfaces B: Biointerfaces*, 86, (2): 1 September, 267-274, (2011).
24. Roohani-Esfahani SI, Lu ZF, **Zreiqat H**. Novel, simple and reproducible method for preparation of composite hierarchal porous structure scaffolds, *Materials Letters*, (65), (17-18), Pages 2578-2581, (2011).
25. Wu C and **Zreiqat H**, Porous bioactive diopside (CaMgSi<sub>2</sub>O<sub>6</sub>) ceramic microspheres for drug delivery. *Acta Biomater*. 6(3):820-9, (2010).
26. \*Wu C, Ramaswamy Y, **Zreiqat H**, Porous diopside (CaMgSi<sub>2</sub>O<sub>6</sub>) scaffold: a promising bioactive material for bone tissue engineering, *Acta Biomater*, 6(6):2237-45, (2010).
27. **Zreiqat H**, Belluoccio D, Smith MM, Wilson R, Rowley LA, Jones K, Ramaswamy Y, Vogl T, Roth J, Bateman JF, Little CB, S100A8 and S100A9 in experimental osteoarthritis, *Arthritis Res Ther*. Jan 27;12(1):R16, (2010)
28. **Zreiqat H**, Ramaswamy Y, Wu C, Paschalidis A, Lu ZuFu, James B, Birke O, McDonald M, Little D, Dunstan CR, The incorporation of strontium and zinc into a calcium-silicon ceramic for bone tissue engineering, *Biomaterials*, 31(12):3175-84, (2010).
29. Lu Z and **Zreiqat H**. Beta-tricalcium phosphate exerts osteo-conductivity through  $\alpha$ 2 $\beta$ 1 integrin and down-stream MAPK/ERK signaling pathway. *Biochem Biophys Res Commun*, 2;394(2):323-9, (2010).
30. Roohani-Esfahani SI, Nouri-Khorasani S, Lu Z, Appleyard R, **Zreiqat H**. The influence hydroxyapatite nanoparticle shape and size on the properties of biphasic calcium phosphate scaffolds coated with hydroxyapatite-PCL composites. *Biomaterials*, 31(21):5498-509, (2010).
31. Lu Z and **Zreiqat H**. The osteoconductivity of biomaterials is regulated by BMP2 autocrine loop involving  $\alpha$ 2 $\beta$ 1 integrin and MAPK/ERK signaling pathways. *Tissue Eng Part A*. 16(10):3075-84, (2010).
32. **Zreiqat H**, Chih-Yi Yeng, Barbara James, Jo Duflou, Harry C Lowe. Probable Endothelisation of Bare Metal Stent Struts Extending from the Left Main Coronary into the Aorta. *J Thromb Thrombolysis*, 30(4):500-1 (2010).
33. Wang C, Gross KA, Anderson GI, Dunstan CR, Carbone A, Berger G, Ploska U, **Zreiqat H**. Bone growth is enhanced by novel bioceramic coatings on Ti alloy implants. *J Biomed Mater Res A*, 90(2):419-28, (2009).
34. Wu C, Ramaswamy Y, Liu X, Wang G, **Zreiqat H**. Plasma-sprayed CaTiSiO<sub>5</sub> ceramic coating on Ti-6Al-4V with excellent bonding strength, stability and cellular bioactivity, *J R Soc Interface*. 6(31):159-68, (2009).
35. Wu C, Ramaswamy Y, Zhu Y, Zheng R, Appleyard R, Howard A, **Zreiqat H**. The effect of mesoporous bioglass on the physiochemical, biological and drug-release properties of poly (DL-lactide-co-glycolide) films. *Biomaterials*, 30(12):2199-208, (2009).
36. Ramaswamy Y, Wu C, Dunstan CR, Hewson B, Eindorf T, Anderson GI, **Zreiqat H**. Sphene ceramics for orthopedic coating applications: An in vitro and in vivo study. *Acta Biomater.*, 5(8):3192-204, (2009).
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- chemical stability and biological properties. *J Biomed Mater Res A* 86(2):402-10, (2008).
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  42. **H Zreiqat**, B James, D Brieger, L Kritharides, HC Lowe. Acute coronary stent thrombosis: insights into possible mechanism. *Thromb Haemost.*, 99(5):976-7, (2008).
  43. Ramaswamy Y, Wu C, Van Hummel A, Combes V, Grau G, **Zreiqat H**. The Responses of Osteoblasts, Osteoclasts & Endothelial Cells to Zirconium Modified Calcium-Silicate Based Ceramic, *Biomaterials*. 29(33):4392-402, (2008).
  44. Wu CT, Ramaswamy Y, Chang J, Woods J, Chen YQ, **Zreiqat H**, The Effect of Zn Contents on Phase Composition, Chemical Stability and Cellular Bioactivity in Zn-Ca-Si System Ceramics. *J Biomed Mater Res Part A*, 87B (2), 346-353, (2008).
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### Invited review articles

79. Carbon Nanotubes: their Potential and Pitfalls for Bone Tissue Regeneration and Engineering, Newman P, Minett A, Ellis-Behnke R, **Zreiqat H**, *Nanomedicine*. Jun 12. pii: S1549-9634(13)00269, (Review) (2013).
80. Wu C, Ramaswamy Y, **Zreiqat H**., Orthopaedic coating materials: consideration and applications, *Orthopaedic Expert Reviews in Medical Devices*; Review, Jul;6(4):423-430, (2009).
81. Schulze-Tanzil G, **Zreiqat H**, Sabat R, Kohl B, Halder A, Riccarda D. Interleukin-10 and Articular Cartilage: Experimental Therapeutical Approaches in Cartilage Disorders. *Curr Gene Ther*, 9 (4): 306-315, 2009.
82. Wang G and **Zreiqat H**, Functional Coatings or Films for Hard-Tissue Applications, *Materials*: 3, 3994-4050, (2010).

### Invited book chapters

83. ZF Lu Roohani-Esfahani SI, **Zreiqat H**. Mimicking Bone Microenvironment for Directing Adipose Tissue-derived Mesenchymal Stem Cells into Osteogenic Differentiation, *Methods in Molecular Biology*, Springer Protocols, In press, 2013.
84. Wang G, Lu ZF, and **Zreiqat H**. Ceramics for skeletal bone regeneration. In: Bone Substitute Biomaterials. K. Mallick (Ed.). 2013 (In press)

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