



THE UNIVERSITY
of EDINBURGH



CURRICULUM VITAE

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<http://www.zjustemcell.com/en/index.asp>

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CURRICULUM VITAE

Part I: General Information

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US CITIZENSHIP STATUS: United States (U.S.A) Citizen

ACADEMIC EDUCATIONS/ QUALIFICATIONS

- 2001-2005** Ph.D., Developmental Biology (Placental organogenesis), Manchester University, UK
- 1994-1998** M.Sc. (Research), Cell and Developmental Biology (Mechanisms controlling Neural Crest Cell formation, migration and differentiation), Zagazig University, Egypt
- 1987-1992** B.Sc. (Hons.), Zoology, Tanta University, and High Diploma in Molecular & Cell Biology, Cytology and Histology, Menoufia University, Egypt

POSTDOCTORAL RESEARCH TRAINING & TEACHING EXPERIENCE

- 2008-2011** Senior Research Scientist, Children's Hospital Los Angeles, USA
- 2006-2008** Research Scientist, Mount Sinai School of Medicine, New York University, USA
- 2005-2006** Postdoctoral Fellowship, McLaughlin Research Institute for Biomedical & Neurogenetic Research, Montana University, USA
- 2002-2003** Teaching Assistant/ Demonstrator (2 years), Manchester University, UK

ACADEMIC APPOINTMENTS

- 2016-present** Associate Professor (Tenure-Track) & Senior Principal Investigator (PI) of Biomedicine, Stem Cell/Regenerative Medicine & Cell/Developmental Biology, The University of Edinburgh-Zhejiang University Biomedical Institute
- 2016-present** Professor & senior PI (*Adjunct*), the Department of Stem Cell and Regenerative Medicine & Molecular Medicine Research Centre, School of Basic Medicine & School of Medicine, Zhejiang University, China
- 2012-2015** Assistant Professor & Principal Investigator of Stem Cell & Regenerative Medicine, University of Southern California (USC), Keck School of Medicine and Children's Hospital Los Angeles, Los Angeles, USA
- 2012-2015** Assistant Professor & Principal Investigator of Craniofacial Biology, Craniofacial Molecular Biology Centre, Univ. of Southern California, Ostraw School of Dentistry, USA

International Contributions: University Services & Positions

2015 Visiting Professor of Stem Cell and Regenerative Medicine, Arabian Gulf University College of Medicine/Jawhara Centre for Molecular Medicine, Kingdom of Bahrain, as well as University of Dammam, KSA (2 week visits)

OTHER PROFESSIONAL RESEARCH EXPERIENCE

1994-1996 Research Associate, Academy of Scientific Research & Technology, Egypt
1991-1994 Research Assistant, Agriculture Research Centre & Postgraduate Research Intern/Assistant, Menoufia University, Egypt

Part II: Departmental Administrative, Committee Responsibilities and other Activities

Committee Membership (Recent)

2017-present Committee Member, PhD candidate student selection committee, Schools of Medicine & Basic Medicine, Zhejiang University, China
2017-present Committee Member, Faculty Teaching & Learning (FTL) Improvement Committee, University of Edinburgh-Zhejiang International Campus Biomedical [UoE-ZJU] Institute
2018-present Committee Member, Student and Staff Liaison Committee (SSLC) at UoE-ZJU Institute

Administrative and Management Duties:

2008-2012: Member, Stem Cell & Regenerative Medicine Program, Children's Hospital Los Angeles, USA
2008-2015: Active Contributor, Annual USC-CHLA Dev. Biology, Regenerative Medicine and Stem Cell Retreat, and annual CHLA research symposia
2012-2015: Member, Stem Cell & Regenerative Medicine Program, and Contributor to different Institutional Committees (e.g. Animal Care/ Use and Biosafety committees), Department of Surgery, Keck School of Medicine & CHLA, University of Southern California, USA

Duties in My Field of Interest Outside The University:

2013-Present: International extramural review (selected) at the Medical Research Council (MRC), UK
2014-Present: In addition to my services at USC and Children's Hospital Los Angeles, I am extramural reviewer and examiner of Master and PhD theses at School of Science, Mansoura University, Egypt
2014-Present: International extramural review and strategic advisory panels at the newly established Stem Cell and Regenerative Medicine Research Centre at Tanta University School of Medicine, Egypt
2014-Present: Invited examiner and assessor of two international PhD dissertations/theses, as well as supervisor/mentor of one International PhD Student
2015-Present: Active Member of the Scientific Organizing Committee for both the Annual International Conference on Health & Medical Sciences, and the Annual International Conference on Biology in Athens, Greece (in 2015 and 2016).

Active Role In Society & Presentations/ Dissemination Of Scientific Knowledge Via Other Means:

I have an active role in society and present lectures on the basics of stem cells & regenerative medicine (and other relevant branches of science), and their significance in our life for school/college students and the public. These lectures have been delivered through direct presentations to the public, youth clubs, TV Talk Shows and by writing on Facebook and other social media.

Part III: Professional Activities/Services in the Academic Community & Awards and Honors

Scientific Advisory Boards (Recent)

2017- Scientific Advisor at MomentEra (USA) International Congress Organizer

Professional Society Membership & Involvement:

2017- Member, Zhejiang Biomedical Society, China
 2015 Chairman, stem cell and regenerative medicine session, 30th International Conference of Tanta University "Multidisciplinary Medicine Era-2", May 3-8, 2015, Tanta City, Egypt
 2014 Chairman, stem cell and regenerative medicine session, 1st Health and Life International Conference, November 3-5, 2014, Nasr City, Cairo, Egypt
 2014 Chairman, stem cell and regenerative medicine session, 29th International Conference of Tanta University "Multidisciplinary Medicine Era", March 17-20, Tanta City, Egypt
 2014- Member, XPRIZE Organogenesis Visioneering Expert Group, USA
 2013 Session co-Chairman, lung repair/regeneration & stem cells session, The Gordon Research Seminar/Conference, USA
 2011- Member, American Heart Association
 2011- Member, The Histochemical Society, USA
 2011- Member, American Thoracic Society
 2011- Member, Society for Developmental Biology, USA

Study Section and Council Membership (Recent)

2013- Peer Reviewer, Medical Research Council (MRC) grant applications [International extramural review; selected], London, UK

Editorial Boards

[1] Executive Editor; 2017-present Journal of Cell Biology & Metabolism, London, UK
 [2] Editorial Board Member; 2017-present, of J. Stem Cells, USA
 [3] Editor; 2017-present, Springer International Publishing AG (Springer Nature), Germany
 [4] Editorial Board Member; 2017-present, Journal of Medical Histology
 [5] Editor, Stem Cell Behavior in Health and Diseases; 2017- (Springer Publisher; *Submitted*)
 [6] Distinguished Editorial Review Board Member; 2017-, J. American Academic Research, USA
 [7] Editor, Developmental/Stem Cell Biology in Health & Disease; 2016, (Bentham Science Publisher)
 [8] Lead Editor, Frontiers in Stem Cell Treatments; 2013-present, Frontiers, Switzerland
 [9] Editorial Board Member; 2013-present. Edorium Journal of Stem Cell Research and Therapy, and Journal of Stem Cell Research Transplantation.
 [10] Editorial Board Member; 2013-present. Austin Journal of Anatomy and JSM Regenerative Medicine & World Journal of Respiriology (2011-; Baishideng Publishing Inc)

Journals Reviewed (in alphabetical order)

[1] American Journal of Lung Cellular and Molecular Physiology
 [2] American Journal of Respiratory Cell & Molecular Biology
 [3] Developmental Biology
 [4] PLOS ONE
 [5] Experimental Cell Research
 [6] Genesis
 [7] Histochemistry and Cytochemistry &
 [8] Frontiers in Oncology (Stem Cell Research section)

Honors and Awards

- 2018** **Invited Stream Leader** on Developmental Biology, the 4rd Annual Intl. Conference on Biology, Athens, June 25-28, Greece
- 2018** **Chairman & organizer**, Sustainable Development Intl. Conference, the Arab League, Egypt
- 2018** **Organizing Committee Member** (invited), the International Conference on Stem Cell and Regenerative Medicine”, June 18-19, 2018, Osaka, Japan.
- 2017** **Kuwait Foundation For the Advancement of Science’s Prize in Applied Medical Sciences** (KFAS), *nominee*
- 2017** **One-Thousand Talent Project Prize** (Zhejiang, China), *nominee*
- 2017** **Chairman & Organizing Committee Member**, International Translational and Regenerative Medicine Conference ITMC-2017, November 1-3, Barcelona, SPAIN
- 2017** **Chairman** (invited), Session 203: Transdifferentiation, Reprogramming, Signaling Regulations, 11th World Congress of Regenerative Medicine & Stem Cell, Nov.14-16, Singapore.
- 2017** **Invited Speaker**, the 3rd Annual Intl. Conference on Biology, Athens, June 19-22, GREECE
- 2017** **Chairman** (invited) the “Progress in biomedical sciences” session, The 8th Annual Conference of School of Basic Medical Sciences, Zhejiang University, Hangzhou, China.
- 2016** **Scientific Organizing Committees** of the 4th Annual International Conference on Health & Medical Sciences, Athens, GREECE
- 2015** **Scientific Organizing Committees** of the 3rd Annual International Conference on Health & Medical Sciences, and the Annual International Conference on Biology, Athens, GREECE
- 2015** **Invited Speaker**, “Balancing phosphatase-kinase activity as a new approach for controlling stem cell behavior and stem cell-associated diseases”, the 3rd Annual Intl. Conference on Biology at the Athens Institute for Education and Research, June 20-23, Athens, GREECE
- 2015** **Invited Speaker**, “Stem cells in lung development & reparative medicine” at Arabian Gulf Univ. College of Medicine & Molecular Medicine Centre, May 9-12, Manama, BAHRAIN
- 2015** **Invited Speaker**, “Applications of stem cells in lung diseases and biomedical sciences” at Dammam University Hospital, Feb 27-March 7, Dammam, SAUDI ARABIA
- 2015** **Chairman/Discussion Leader** of the stem cell and regenerative medicine session at the international conference of Tanta University “Multidisciplinary Medicine Era-2”, EGYPT
- 2014** **Chairman/Discussion Leader** of the stem cell and regenerative medicine session at the Health and Life International Conference, Ministry of Health, Cairo, EGYPT
- 2014** **Invited Speaker**, “Mechanisms of stem cell behavior during lung formation, regeneration and congenital defects” at Sanford Children’s Health Research Center, Oct 16-17, USA
- 2014** **Invited Speaker**, “Molecular control of lung stem cell behavior and application in tissue repair and regeneration” at the 3rd International Conference on Tissue Science and Regenerative Medicine, Sept. 24-26, Valencia, SPAIN
- 2014** **Invited Speaker**, “Balancing lung stem cell behavior: Applications in tissue repair & regeneration” the 2nd Intl. Biotechnology Conference, National Research Centre, May 6-8, EGYPT
- 2013** **Co-Chairman/Discussion Leader** of the lung repair session at the Gordon Research Seminar /Conference, August 16-18, USA
- 2013** Travel Award for Gordon Research Conference on lung development, injury/repair, USA
- 2012** **Invited Speaker**, “Molecular control of lung stem cell behavior in Health and diseases” at the 5th Annual World Congress of Regenerative Medicine & Stem Cells, Guangzhou, China
- 2012-2015** **National Scientist Development Award, American Heart Association, USA**
- 2011** Travel Award for the International Lung Stem Cell and Regeneration, Vermont University
- 2011** Society of Developmental Biology (SDB) Travel Award, USA
- 2011** **Invited Speaker**, “Eya1 enzyme, a novel regulator for lung stem cell fate/behavior” at the 70th Intl. Meeting of the Society of Developmental Biology, July 21-25, Hawaii, USA
- 2009-2012** **California Institute of Regenerative Medicine (CIRM) Stem Cells Award**
- 2008** American Lung Association Senior Research Fellowship Award (1.5 score)
- 2004** Africa and Leche Educational Trust Awards, UK
- 2002-2004** Arab-British Foundation (UK) and Arab-student Aid International (USA) Research Awards
- 2001-2003** **Overseas Research Student (ORS) Award**, awarded by UK government (the Committee of Vice-Chancellors and Principals of the UK Universities (CVCP; Universities UK), UK
- 2001-2003** **University of Manchester Research Scholarship (URS) Award, UK**

- 2002** Sidney Perry Foundation and Southdown Trust Awards, UK
- 2000** University of Reading Overseas Postgraduate Scholarship Award, UK
- 1998** University of Birmingham International Student Scholarship Award, UK
- 1993-1996** National Scholarship Award of the Academy of Scientific Research and Technology, Egypt

Part IV: Research, Administration and Teaching

A. Narrative of Research

Overview - Since 2006, my major research expertise and interests lie in the area of stem cell biology and behavior, regenerative medicine, respiratory diseases, and stem cell-based therapy for tissue injuries and diseases, as well as genetic and molecular mechanisms of congenital birth defects and developmental disorders (e.g. tissue hypoplasia, and some cardiovascular and craniofacial disorders). My major research interests also involve working with basic and clinical research scientists to advance innovative translational research projects from the bed to the bedside utilizing molecular, cellular and gene-based investigations to clinical trials and new stem cell-based and genetic-based treatments for human diseases and disorders. I am also interested in identifying the molecular mechanisms of stem cell self-renewal (important for cancer development).

Stem Cell Behavior, Regenerative Medicine and Lung Diseases Project Overview - My deepest interest is in understanding cellular and molecular mechanisms that control stem cell biology and behavior (i.e., self-renewal, differentiation or apoptosis), organ morphogenesis, and underlying lethal and nonlethal congenital (and acquired) defects such as lung hypoplasia and Bronchopulmonary dysplasia (BPD), wherein a significant deficiency of stem cells occurs, and stem cell-related diseases such as Lung Fibrosis. These defects and diseases are common features of human prematurity and/or injury and are thus major public health problems in human infancy. My research focuses on the identification of the molecular mechanisms that control stem cell behavior, and how changes in this behavior lead to tissue/organ defects or disorders? Can restoring stem cell behavior treat and reverse these defects or disorders. I use this basic knowledge of understanding the mechanisms that control the behavior of stem cells in the identification of novel stem cell-based therapy for severe human diseases and disorders such as **Lung fibrosis** and **hypoplasia** as well as **BPD**.

I want to identify the functional role of several genes and phosphatases in controlling self-renew and behavior of tissue specific-stem cells during the development, repair and regeneration of organs (e.g., lungs), as well as application of stem cell-based therapy in the repair and regeneration of these organs.

Congenital Craniofacial Defect Project Overview - Since I have recently discovered that genes and enzymes that control lung stem cell behavior may play important roles in the development of some neural crest cell-based congenital craniofacial and tooth disorders, I am interested in identifying genetic & cellular mechanisms controlling the development of congenital craniofacial disorders. I am interested in the applications of neural crest stem cells in the treatment of craniofacial and tooth defects/disorders.

I have the following examples of the significance and Innovation of my research:-

- [1]** I have discovered the molecular mechanism(s) by which a protein phosphatase such as Eya1 controls cell polarity and fate as well as both asymmetric cell division and the balance between self-renewal and differentiation of lung stem cells by regulation of aPKC ζ /Par/Numb/Notch, which will help to identify novel targets for innovative preventive and therapeutic strategies to manipulate lung stem cells for lung repair, regeneration.
- [2]** I have discovered the regulatory mechanism by which Eya1 phosphatase controls tight junction assembly and barrier functions by regulating aPKC ζ phosphorylation and Cdc42 activity that is critical for understanding normal lung morphogenesis, repair and regeneration. Identification of these novel molecular mechanisms will provide new insights into understanding major lung diseases: ALI, COPD, Asthma, which are associated with the loss of epithelial integrity and barrier functions as well as congenital lung defects.

- [3] I have discovered the importance of Eya1 phosphatase in epithelial organization, which will aid in the future design of novel strategies to prevent and treat asthma exacerbation, as well as possible screening strategies to determine genetic susceptibility to asthma.
- [4] I have identified novel functions of Eya1/Six1 transcription factors as critical regulators of the spatial expression pattern and activity of SHH and FGF10 signaling in the lung. Since we found that this co-regulation process fails in lethal forms of congenital pulmonary hypoplasia as well as in acquired forms of hypoplasia due to lung injury, such as BPD, our novel findings will help in devising new therapeutic approaches to correcting these lung diseases of babies, children and adults.
- [5] I have discovered that Eya1/Six1 genes protect against the development of cardiovascular and lung vasculature congenital defects.
- [6] I have recently discovered that regulation of PKC activity by tyrosine phosphatases is critical for the development of lung fibrosis (*manuscript is currently in preparation*).

For examples of my scientific discoveries, see Reuters' press releases at the [end of my CV](#).

My specific plan of research and future directions are to investigate the following aspects of stem cell biology, regenerative medicine, tissue repair/ regeneration, as well as molecular mechanisms of congenital birth defects, developmental disorders and human diseases:-

- [1] How protein phosphatases regulate the behavior, apical-basal polarity, and asymmetric cell division, as well as the balance between self-renewal and differentiation of epithelial stem/progenitor cells during organogenesis and tissue repair/ regeneration.
- [2] Molecular, genetic/epigenetic mechanisms of protein phosphatases suppression in different human diseases /defects such as cardiovascular defects, and congenital forms of craniofacial defects, lung hypoplasia and BPD, wherein a significant deficiency of stem cells occurs, as well as their implications for epigenetic therapy.
- [3] What is the role of stem cells in lung fibrosis and how stem cells can treat it?
- [4] What are the molecular mechanisms that control stem cell behavior, and how changes in this behavior lead to certain lung or cardiovascular defects? Can restoring stem cell behavior treat and reverse lung or cardiovascular defects/disorders?
- [5] Analysis of molecular mechanisms that direct endogenous tissue-specific stem cells to generate any epithelial cell type, as a means for developing novel approaches to ameliorate human diseases.
- [6] What are the molecular mechanisms involved in human diseases such Lung Fibrosis, BPD, COPD, acute lung injury and congenital lung abnormalities? How protein phosphatases contribute to lung regeneration, what are the molecular mechanisms involved in their control of lung repair/ regeneration?
Specifically, could protein phosphatase provide a protective effect on alveolar epithelial stem cells in Lung Fibrosis or the bronchopulmonary dysplasia (BPD), wherein a significant deficiency of stem cells occurs, that is a serious chronic lung condition affecting newborn babies in human?
- [7] How protein phosphatases control epithelial and endothelial cell permeability and tight junction assembly as well as regulates the balance between self-renewal and differentiation of endothelial and vascular stem cells that differentiate and form the components of the vessel wall.
- [8] What are the auto- or paracrine factors in epithelial or mesenchymal cell lineages that are required for both epithelial vascular smooth muscle (VSMC) stem cell differentiation and growth?
- [9] What are the functional and protective role of transcription factors and protein phosphatases during organ development and tissue repair and regeneration.

Research Summary

In summary, my research involves multidisciplinary basic science, and potential translational research programs. We look for and work closely with highly innovative basic research scholars, translational science-based researchers, population and clinical research scientists in the world.

My research projects and programs (described above) are designed to enable students at any stage of their career including High School Students, Undergraduate and Graduate Students, Postdoctoral Scholars, Medical Residents and Junior Faculty gain fundamental, hands-on knowledge about the role of protein phosphatases and transcription factors and other molecular mechanisms in controlling stem cell behavior in a number of human disease, defects and disorders for the benefit of human health.

Our projects utilize cutting edge *in vitro* and *in vivo* animal models that closely mimic human diseases and disorders, and we utilize novel cellular and molecular biology techniques (including genomics and proteomics) to elucidate and identify novel molecular mechanisms that can protect against numerous diseases and disorders that compromise human health and well-being.

Part IV: Research, Administration and Teaching

B. Teaching Philosophy, Activities & Experience

A Statement of Personal Attitudes Towards Teaching

I consider teaching to be an essential component of a professional career in biomedical, medical and biological sciences. This is reflected in my strong commitment towards teaching. My personal attitude towards teaching can be summarized in five tenets of effective teaching that I have developed over time.

First, is a thorough mastery of the subject matter at the level at which it is to be taught i.e., the material must be presented at the appropriate level. Hence, I devote considerable time in preparing each lecture.

Second, effective teaching requires the ability to connect with the students. It is my belief that the study of biomedical, medical and biological sciences is particularly rewarding when it provides insights into major medical and/or biological issues. Hence, I try to provide strong motivation for each topic covered in class and to encourage and stimulate questions and discussions about the course material.

Third, I believe that the instructors' presentational style must be active and enthusiastic. This will help retain and nurture the student's attention and interest in the course material.

Fourth, biomedical and biological sciences are a rapidly advancing subject with new techniques being developed that enable previously unknown mechanisms to be elucidated. All this is happening at a rapid pace. Hence, I try to provide the students with current information on the most recent advances in biomedical and biological sciences that are relevant to the course material.

Finally, the instructor must be accessible to the students outside the class. Depending on the size of the class, I try to meet with small groups of students for lunch or coffee once or twice a week throughout the semester. This enables me to get to know my students as individual and to become aware of any difficulties they may be having in class so that I can adapt my style of teaching to address any of these problems.

List of Teaching and Course Coordination Responsibilities and Education Activities /Experience

for biomedical, biological, pre-medical, pre-clinical and other biomedical-related and biological science students (Undergraduate & Postgraduates):

- [1] Stem Cell Biology
- [2] Regenerative Medicine
- [3] Developmental Biology & Building an Organism
- [4] Cell Biology & Genetics
- [5] Reproductive biology & Embryology
- [6] Cells and Tissues, Histology & Cytology
- [7] Respiratory System Structure & Function
- [8] Biology of Non-transmissible diseases
- [9] Evolution & biological diversity (basic)

In these courses/classes, I have applied several modern education/teaching methods, including

- Problem-based learning (PBL) & Activity-based learning,
- Inquiry-based learning & Collaborative/Differential learning,
- Digitisation in teaching, learning assessment and feedback.

In addition, I use teaching methods such as Lectures and on-line supporting materials (e.g. on-line 'Blackboard' facility), Tutorials and Workshops, PBL sessions, Practical classes, in-course assessment methods

Example of a Laboratory-based Courses that I Have Developed and Taught

For Example, I am interested in developing and teaching the following laboratory-based courses in Cell Biology and Developmental Biology and Histology (at both the Undergraduate and Graduate levels), in addition to other courses that may be assigned to me:-

Theory:

- 1- Introduction of cell and developmental biology
- 2- Cells and tissues: different body tissues, Histology, Organs & System, Organ Dissection, Reading & Assessment of Histological sections.....etc)
- 3- Reproductive biology : Fertility and Conception, Development and Birth
- 4- An advanced description of the embryonic development of animals, which covers the basic concepts of fertilization, gastrulation, and neurulation.
- 5- Cell biology of organogenesis
- 6- Genetic control of organogenesis
- 7- Molecular basis of animal development and cell differentiation
- 8- Advanced research analysis in current cell biology, genetics and developmental biology, with an emphasis on the molecular mechanisms of pattern formation and differentiation.

Laboratory Tutorials:

Students will use state-of-the-art equipments to learn histology of different embryonic stages in mammals such as mouse embryos and practice the following techniques: light microscopy, digital image capturing, quantitative image analysis, embryo sectioning and tissue staining, and scientific writing and reporting. Students will also get training in different and selected cell biology research techniques. I will design these laboratory exercises in order to reinforce concepts developed in accompanying lectures, and provide an important opportunity to develop hands-on skills and problem-solving abilities that enhance students' experiences in Cell /Developmental Biology. Undergraduate students will be exposed to modern equipments and computer-based data acquisition and analysis, but at the same time emphasize a clear understanding of what and how the instruments are measuring. I will ask my students to develop and execute a small research project that makes use of the experimental skills they have developed.

Furthermore, I have the following plan and specific goals for teaching cell/developmental biology courses:

Overall goal: Provide students an outstanding learning experience in each cell biology and developmental biology courses that I teach. Each cell/developmental biology course will reflect the most current knowledge and utilize the most effective teaching styles and techniques.

Specific goals:

- 1- Develop quality cell biology and developmental biology courses to be taught during the academic year. This will entail doing the following:-
 - Evaluating and choosing a textbook and atlas
 - Writing learning objectives and expectations for each lecture/chapter
 - Purchasing or developing resources for the class, including embryonic stages models, interactive learning activities for class, MRI/CT films, interactive embryology CD-ROMS and Internet sites
 - Developing lecture presentations and class handouts
 - Establishing an exam question test bank
 - Receiving evaluations of the course by students and faculty peers
- 2- Develop new labs to enhance students' experiences in cell biology /developmental biology. Students will use state-of-the-art equipments to learn histology of different embryonic stages in mammals such as mouse embryos and practice the following techniques: light microscopy, digital image capturing, quantitative image analysis, embryo sectioning and tissue staining, and scientific writing and reporting.
- 3- Continue to carefully read student comments on course evaluations. I will make course adjustments as appropriate to improve student learning.
- 4- Develop a variety of written examination (mid-/final term) and in-course assessment methods to assess students' performance
- 5- Include more **active learning activities** in classes. Students will be more active in class by working as individuals and in small groups to complete worksheets, solve application problems, discuss and analyze non-clinical and clinical case studies, use interactive CD-ROMs and Internet sites, manipulate models, give class presentations, discuss current research methods in cell biology and developmental biology and results, etc.
- 6- Apply modern education/teaching methods such as **Problem-based learning (PBL)** & Activity-based learning, Inquiry-based learning & Collaborative/Differential learning, Digitisation in teaching, learning assessment and feedback, and on-line supporting materials (e.g.**Blackboard**).
- 7- Attend University- and department-organized Teaching Portfolio Workshops. These workshops will help me develop a teaching portfolio and use it to assess and improve my classes.
- 8- Regularly read books on teaching for new faculty. I plan to consistently read these books to sharpen my teaching skills and motivate me to be a better teacher.
- 9- Solicit more feedback about my teaching from faculty peers. I will ask my senior colleagues, who are working on cell and developmental biology, to attend my classes and evaluate my cell biology and developmental biology course organization and materials. I hope their feedback will lead to improvements in my courses.

International Contributions: Teaching Services

2015 Visiting Professor of Stem Cells and Regenerative Medicine, Arabian Gulf University College of Medicine, Kingdom of Bahrain, and Dammam University, Saudi Arabia

Recent Advisory Responsibilities: Academic Advisor, Thesis Dissertation Advisor and Postgraduate Mentor

Academic Advisee (Undergraduates) at University of Edinburgh-Zhejiang University Institute 2017-present Shao Dai, Sandra, Sun Xiang, Lize, Calire, Lian and Shuting (8 students)

Undergraduate Research Trainees

2014-2015 Vivian Lu, University of Southern California, Los Angeles , USA
 2014-2015 Vanessa Yu, University of Southern California, Los Angeles , USA
 2014-2015 Evelyn Liu, University of Southern California, Los Angeles , USA
 2014-2015 Divesh Sachdev, University of Southern California, Los Angeles , USA
 2014-2015 Priyam Shah, University of Southern California, Los Angeles , USA

Undergraduate Research Trainees[short-term & summer students from other universities/colleges]

2014-2015 Deshna H. Majmudar, California State University, Los Angeles (CSULA), USA
 2014-2015 Haifen Huang, California State Polytechnic University, Pomona, Los Angeles, USA
 2013-2014 Wadah AlHassan, California State Polytechnic University, Pomona, Los Angeles, USA
 2014 Jamie Adkins, California State Polytechnic University, Pomona, Los Angeles, USA
 2014 Jessie Tobey, California State Polytechnic University, Pomona, Los Angeles, USA
 2014 Juan Berumen, California State Polytechnic University, Pomona USA

Graduate Research Trainees

2012-2014 Karol Lu, B.Sc., University of Southern California, Los Angeles, California, USA (funded by a grant for my laboratory from the California Institute of Regenerative Medicine)
 2012-2014 Karen EK, B.Sc., California State University San Bernardino, San Bernardino, California
 2013-2015 John Ku, B.Sc., California State Polytechnic University, Pomona, California, USA
 2014 Stephanie Leguizamon, B.Sc., California State Polytechnic University, Pomona, Los Angeles, California, USA
 2014-2015 Safia Gilani, B.Sc., University of Southern California, Los Angeles, USA

International Graduate Medical Student Research Trainees

2013-2015 Sameh El Shehawy , M.D., College of Medicine, Cairo University, Cairo, Egypt
 2013-2014 Moustafa El Hockey, M.D., College of Medicine, Tanta University, Tanta, Egypt

Recent Doctor of Philosophy (Ph.D.) Thesis Committee Member

2015- Lamis M. F. El-Baz, M. Sc., University of Southern California School of Medicine and Faculty of Science, Suez University, Egypt. Thesis Title: "Immunomodulatory and Molecular Mechanisms of Zinc/Vanadium-Induced Experimental Asthma/Bronchitis.
 2017- Yaqing Zhu, MSc, Zhejiang University. Thesis "Molecular mechanisms of lung fibrosis"

Doctor of Philosophy (Ph.D.) External Examiner

2014-2015 Invited external examiner for two PhD theses on stem cells and their applications in human diseases, Mansoura University, Egypt

Postdoctoral Scholars/Research Trainees

2014-2015 Ahmed Ragaa Nour Ibrahim, Ph.D., from Hiroshima University, Higashi-Hiroshima, Japan

Part IV: Research, Administration and Teaching**C. Administrative & Leadership Philosophy**

Over the course of my research and academic career at different universities, I have found that administrative success on an academic level flourishes and thrives when the Provost, under the guidance of the President, works collaboratively to set the academic vision, provides leadership and direction for all aspects of the academic programs, and supervises related academic activities. In addition, the Provost and Deans work in concert with Departmental Chairs to ensure that all faculty and staff understand and supports their goals and are proponents of academic freedom. Over the years I have found that success in leading university faculty and laboratory research staffs comes from letting the faculty and staff know that their views are important and valuable. Therefore, I strongly adhere to

the administrative policy of shared governance. This means that critical decisions affecting faculty and staff should initially be discussed in an open forum together with a council comprised of representative junior and senior faculty. In addition, there should always be a continuous process of strategic planning. Such strategic planning should not be performed in a vacuum, but must be integrated with the overall long-term vision and goals of the entire institute.

Although I prefer the administrative policy of consensus-building and shared governance, I however, do not shy away from taking full responsibility for making potentially unpopular executive decisions when necessary. Although the pursuit of excellence must be the guiding principle for faculty members and laboratory research staffs the value of compassion in the face of adversity and fairness toward all members must be beyond question. In addition, the diversity of faculty and staff is extremely important and adds concrete value to institutions and society.

There are three major pinnacles to academic leadership including teaching, research and service to the university and the wider community. Although, there are numerous approaches to leadership, I believe that no single approach is best for all situations. That said, in any new position I will spend a great deal of time and energy first learning about the culture and customs of the institute before making any significant changes, whatsoever.

I consider that an academic leader must be intellectually curious, enthusiastic and empathetic, as well as a forceful and passionate advocate for Departments, Programs, Faculty and Staff. I believe a leader must be forthright, honest and sincere, as well as open minded and of the very highest personal integrity. An essential aspect of leadership also involves spending time actively engaging and mentoring junior faculty and staff.

Part IV: Research, Administration and Teaching

D. Recent Research Funding Information

The UoE -ZJU Joint Research Grant Award **EI-Hashash (PI)** **2017-2019**

The goal of the University of Edinburgh-Zhejiang Research Fund Award (UoE-ZJU) is to support my research projects on “ Stem cells roles in the regenerating and repair of the lung during Morphogenesis and Pulmonary Fibrosis”.

Role: Principal Investigator (PI)

American Heart Association, NSG **EI-Hashash (PI)** **2012-2015**

The goal of this 4-year National Scientist Grant (NSG) from the American Heart Association, USA was to investigate the genetic and molecular mechanisms that regulate lung epithelial stem cell polarity, asymmetric cell division and cell fate during both development and repair/regeneration after injury as well as during congenital/developmental lung defects.

Role: Principal Investigator (PI)

California Institute of Regenerative Medicine **EI-Hashash (PI)** **2012- 2014**

The goal of this California Institute of Regenerative Medicine (CIRM) Stem Cell Research Grant was to investigate the function of some stem cell-specific genes in stem cell self-renewal and survival during lung development, repair/regeneration and developmental defects.

Role: Principal Investigator (PI)

Qusm- CHLA Joint Research Fund Award **EI-Hashash (PI)** **2014- 2015**

The goal of this 2-year research grant that is funded by an international collaboration between Children Hospital Los Angeles USA (CHLA) and an overseas university, is to investigate the molecular regulation

of neural crest stem/progenitor cells during craniofacial and tooth morphogenesis, repair and regeneration by transcription factors.

Role: Principal Investigator (PI)

Ministry of Higher Education, Egypt

EI-Hashash (PI)

2015-2017

The goal of this 2-year research grant is to Identify a novel therapy for Asthma and Bronchitis exacerbation in Egypt. This research is a collaboration between my laboratory, Egyptian government and investigators from Suez University, Egypt. The research study focuses, in particular, on the molecular mechanisms of Zinc/Vanadium-induced lung diseases as well as the interaction between genetic predisposition and Zinc/Vanadium exposure in the development of asthma/bronchitis.

Role: Principal Investigator (PI)

California Institute of Regenerative Medicine

EI-Hashash (co-PI)

2009-2012

The goal of this 3-year California Institute of Regenerative Medicine (CIRM) Research Grant Award was to target lung repair and regeneration after injury from an understanding of the behavior of lung stem cells and the genetic basis of the balance between stemcell and differentiating cell populations in the developing lung. It also focused on the functions of the interaction between protein phosphates and kinases in the development of lung congenital and developmental defects.

Role: co-Principal Investigator (co-PI)

American Lung Association

EI-Hashash (PI)

2008-2009

The goal of this American Lung Association Senior Research Fellowship Award for senior postdoctoral training was to investigate the novel functions of Eya1 and Six1 genes in early lung development and congenital lung hypoplasia (1.5 score).

Role: Principal Investigator (co-PI)

E. Regional, National and International Contributions

Recent Invited Speakerships & Poster Presentation (2009-present)

- June 2018:** "Proper establishment of epithelial polarity as a new mechanism for lung stem cell behavior (Invited Speaker). International Biology Conference (ATINER), Athens, Greece
- Aug. 2017:** "Stem Cell Behavior in Tissue Regeneration and Diseases" (Invited International Speaker), Mansoura University School of Science, Egypt
- July 2017:** "Stem cell behavior in the regeneration/diseases of endodermal-derived organs" (invited Keynote Speaker). The 14th Tanta Liver & GIT Conference. Tanta University Medical School, Egypt.
- April 2017** "Proper establishment of epithelial polarity as a new mechanism for lung epithelial stem cell behavior and attenuation of idiopathic pulmonary fibrosis" (Invited Speaker). Stem Cells, Tissue Repair & Regeneration Session, the Annual World Congress of Molecular & Cell Biology, Xi'an, China.
- Jan. 2017** "Molecular control of stem cell behavior during lung development, regeneration and congenital defects" (Invited Speaker). The 8th Annual Conference of the School of Basic Medical Sciences, Zhejiang University, Hangzhou, China
- Nov. 2016** "Protein Phosphatase Regulation of apical-basal polarity as a new mechanism for lung epithelial stem cell behavior & protection against lung fibrosis" (Invited presentation). The 3rd Middle East Molecular Biology Congress and Exhibition 2016 - Doha, Qatar.
- Aug. 2016** " Molecular mechanisms of stem cell behavior and their application in biomedicine &

- biotechnology” (Invited Speaker). Egypt-Japanese University of Science & Technology, and Zewail City of Science & Technology, Egypt
- July 2016** “Epithelial polarity and integrity as a novel target for asthma therapy” (Invited Speaker). The 3rd International Environmental Forum-2016: Environmental Pollution: Problem & Solution, Tanta University, Egypt.
- April 2016** “The Molecular Control Of Stem Cell Behavior During Organ Development, Repair/Regeneration & Congenital Defects and Diseases” (invited Speaker). Hamid bin Khalifa University, HBKU. Qatar
- June 2015** “Eya1 and aPKC ζ protein-protein interaction is critical for proper epithelial morphogenesis and prevents tissue hypoplasia” (accepted poster). 20th Annual Poster Session, CHLA/Univ. of Southern California USA
- June 2015** “Protein phosphatase regulation of apical-basal polarity as a new mechanism for Lung epithelial stem cell behavior and protection against lung fibrosis” (Invited Speaker). The 3rd Annual International Conference on Biology, Athens Institute for Education and Research, Athens, Greece.
- May 2015** “Stem cells in lung development, and reparative/regenerative medicine” (Invited Speaker). Arabian Gulf University College of Medicine and Al Jawhara Centre for Molecular Medicine, Kingdom of Bahrain.
- May 2015** “Balancing Stem Cell Behavior as a Novel Gene- and Stem Cell-based Strategy for the Treatment of Pulmonary Diseases, and congenital defects (invited speaker for 2 talks) Univ. of Tanta, and Health and Life International Conference-2, Cairo, Egypt.
- March 2015** “Applications of Stem Cell in Biomedical Science and opportunities for collaboration between El-Hashash Lab at USC and University of Dammam (invited speakers for 2 talks on different topics under the same subject). Univ. of Dammam, Saudi Arabia.
- Nov. 2014** “Balancing stem cell behavior and fate in the lung during repair and regeneration” (Invited Speaker). Health and Life International Conference, Nasr City, Cairo, Egypt.
- Nov. 2014** “Stem Cells in development, reparative and regenerative medicine: Balance is better than in balance” (Invited Speaker). A series of lectures at 4 Egyptian Universities: Cairo, Benha, Mansoura and Tanta.
- Oct. 2014** “Mechanisms of stem cell behavior during lung formation, regeneration and congenital defects”(Invited Speaker). Sanford Children’s Health Research Center, USA.
- Oct., 2014** Organogenesis XPRIZE Visioneering Expert Workshop (Invited to attend and provide advices and insights for designing an international competition in the field of organogenesis), which is sponsored by both XPRIZE and University of California (UCLA) Dream Fund, Los Angeles, USA
- Sept. 2014** “Molecular control of stem cell behavior and application in tissue repair and regeneration” (Invited Speaker). 3rd International Conference on Tissue Science and Regenerative Medicine, Valencia, Spain.
- August 2014** “Different functions of Eya protein phosphatase in lung epithelial cell biology and function as well as stem cell polarity and fate” (invited speaker). School of Science, University of Bath, UK.
- June 2014** “Protein phosphatase regulation of apical-basal polarity as a new mechanism for lung epithelial progenitor cell behavior and regeneration” (Accepted Poster). The Thomas L. Petty Aspen Lung Conference, 57th Annual Meeting on "Rebuilding the Injured Lung, Aspen, Colorado, USA.
- May 2014** “Balancing stem cell behavior: Applications in tissue development, repair and regeneration during heath and diseases” (Invited Speaker, presented by Video Conference from USA). The 2nd International Biotechnology Conference, The National Research Centre, Cairo, Egypt.
- March 2014** “Stem Cell Behavior in Development and Regeneration: To Balance or Imbalance. (Invited Speaker). 29th International Multidisciplinary Medicine Era Conference. Tanta University School of Medicine, Egypt.
- August 2013** “Protein phosphatase regulation of apical-basal polarity as a new mechanism for lung epithelial progenitor cell behavior and protection against lung fibrosis” (accepted poster). The Gordon Research Seminar/Conference, New Hampshire, USA.
- July 2013** “Molecular mechanisms of lung stem/progenitor cell behavior” (Invited Speaker).

- Tanta University Schools of Medicine and Science, Egypt.
- June 2013** “Abrogation of Eya1/Six1 disrupts lung morphogenesis and causes remodeling” (accepted poster). Int’l Society of Stem Cell Research Conference (ISSCR), Boston, USA.
- Dec., 2012** “Molecular control of lung stem cell behavior” 5th Annual Congress of Regenerative Medicine and Stem Cells (Invited Speaker, but not able to attend). Guangzhou, China.
- March 2012** “Mechanisms controlling lung stem cell fate/behavior”, USC–CHLA Dev. Biology, Regenerative Medicine and Stem Cell Retreat (invited Speaker), Los Angeles, USA.
- July 2011** “Eya1 is a novel regulator of the balance between lung stem cell self-renewal and differentiation”, the International Conference on Lung Stem Cell and Regeneration (invited), Vermont University, USA.
- May 2011** “Eya1 phosphatase is critical for lung stem cell fate and behavior”, Annual Conference of the Society of Developmental Biology (invited Speaker), Honolulu, Hawaii, USA.
- April 2011** “Role of Eya1 phosphatase in lung stem cell development”, CHLA-Developmental Biology & Regenerative Medicine Retreat (Invited Speaker), Los Angeles USA.
- Feb 2011** “Molecular Regulation of lung stem cell polarity, spindle orientation and cell fate Stem Cell and Developmental Biology meeting (invited Speaker), Univ. of S. California.
- June 2010** “Molecular regulation of lung stem cell behavior” (Invited Presentation), The 8th Annual meeting of the International Society of Stem Cell Research (ISSCR), San Francisco, USA.
- March 2009** “Function of Eya1 phosphatase in lung stem cell behavior”, California Institute of Regenerative Medicine Annual Meeting, San Francisco, USA.

Part IV: Research, Administration and Teaching

F. Publications

Original Scientific Articles and Reviews

- 1- Elbalshi, RM, El-Serafy S and **El-Hashash AHK** (2001). The development of the neural crest in the cephalic region of *Xiphophorus helleri*. *Egypt. J. Aquat. Biol. & Fish.* 3:85-120.
- 2- El Balshy, RM, El Serafy, SS and **El-Hashash, AHK** (2002). The development of the neural crest cells in *Xiphophorus helleri*, a scanning electron microscopic study. *Egyptian Journal of Zoology* 39:77.
- 3- El-Balshy, RM, El-Serafy, SS, **El-Hashash, AHK** (2002). The development of melanoma in the prenatal stages of *Xiphophorus* hybrid fishes. *Egyptian Journal of Zoology.* 39: 97-123.
- 4- **El-Hashash, A** and Kimber SJ (2004): Trophoblast differentiation in vitro: establishment and characterisation of a serum-free culture model for murine secondary trophoblast giant cells. *Reproduction.* 128(1): 53-71. PMID: 15232064
- 5- **El-Hashash, A**, Esbrit, P and Kimber SJ (2005). PTHrP promotes murine secondary trophoblast differentiation through induction of endocycle, upregulation of giant-cell-promoting transcription factors and suppression of other trophoblast cell types. *Differentiation.* 73(4): 154-174. PMID: 15901283.
- 6- **El-Hashash, A** and Kimber SJ (2006). PTHrP induces changes in cell cytoskeleton and E-cadherin, and regulates Eph/Ephrin kinases and RhoGTPases in murine secondary trophoblast cells. *Developmental Biology.* 290:13-31. PMID: 16375886.
- 7- **El-Hashash A**, Warburton D and Kimber SJ (2009). Genes and signals regulating murine trophoblast cell development. *Mechanisms of Development.* 127(1-2): 1-20. PMCID: PMC2865247.
- 8- Carraro G, **El-Hashash A**, Guidolin D, Tiozzo C and Warburton D (2009). miR-17 family of microRNAs controls FGF10-mediated embryonic lung epithelial branching morphogenesis through MAPK14 and

STAT3 regulation of E-Cadherin distribution. *Developmental Biology*. 333(2): 238-50.

9- Carraro, G, Turcatel G, **El-Hashash, AH**, Warburton, D (2009). miR-17 regulates embryonic lung development. *Am J Respir Cri. Care Med* 179: A3276 (abstract).

10- Warburton D, **El-Hashash A**, Carraro G, Kemp P, Ricardi D, Bellusci S Shi W and Jesudason E (2010). Lung organogenesis. *Curr Top Dev Biol* 90:73-158.

11- El-Hashash A and Warburton D (2010). Eya1 protein phosphatase is a novel critical regulator of lung epithelial stem cell development. *Am J Respir Cri Care Med* 181 (1): A1854 (abstract).

12- El-Hashash A, Alam D, Turcatel G, Bellusci S and Warburton D. (2010). Eyes absent 1(Eya1) is a critical coordinator of epithelial, mesenchymal and vascular morphogenesis in the mammalian lung. *Developmental Biology*. 350(1):112-26. PMID: PMC3022116.

13- El-Hashash A, Warburton D. (2011). Cell polarity and spindle orientation in the distal epithelium of embryonic lung. *Developmental Dynamics*. 240(2):441-5. PMID: PMC3023987.

14- El-Hashash A*, Turcatel G, Alam D, Buckley S, Bellusci S and Warburton D. (2011). Eya1 controls cell polarity, spindle orientation, cell fate and Notch signaling in distal embryonic lung epithelium. *Development*. 138(7):1395-407. *Corresponding Author

15- El-Hashash A*, Alam D, Turcatel G, Bellusci S and Warburton D. (2011). Six1 transcription factor is critical for coordination of epithelial, mesenchymal and vascular morphogenesis in the lung. *Developmental Biology*. 353 (2): 242-258. *Corresponding Author.

16- NieXu J, **El-Hashash AH**, Xu PX. (2011). Six1 regulates Grem1 expression in the meta-nephricmesenchyme to initiate branching morphogenesis. *Developmental Biology* 352(1):141-51. PMID:21281623.

17- Turcatel G, Rubin N, **El-Hashash AH** and Warburton D. (2012). MIR-99a and MIR-99b modulate TGF- β induced epithelial to mesenchymal transition and regulate epithelial plasticity in murine mammary gland. *Plos One*. 7(1):e31032.

18- El-Hashash A* and Warburton D. (2012). Numb expression and asymmetric versus symmetric cell division in embryonic distal lung epithelium. *J. Histochem. and Cytchem*. 60(9):675-82. *Corresponding Author

19- El-Hashash A*, Turcatel G, Varma, S, Berika M, Alam D, and Warburton D. (2012). Eya1 protein phosphatase regulates tight junction formation in lung distal epithelium. *Journal of Cell Science*. 125(Pt 17):4036-48. *Corresponding Author

20- El-Hashash A* (2013). Lung Stem Cells: Mechanisms of Behavior, Development and Regeneration. *Journal of Anatomy and Physiology* 3:119. *Senior/Corresponding Author

21- Lu K, Reddy R, Berika M, Warburton D, and **El-Hashash A*** (2013). Abrogation of Six1/Eya1 disrupts the saccular phase of lung morphogenesis and cause remodeling. *Developmental Biology* 382: 110–123. * Senior & Corresponding Author

22- Berika M, Elgayyar M and **El-Hashash A*** (2014). Asymmetric cell divisions of stem cells in the lung and other systems. *Front. Cell Dev. Biol. (Stem Cell Treatments)* 2:33. *Senior/Corresponding Author

23- El-Hashash A* (2014). New insights into the regulation and functional significance of Numb in lung stem cells during organogenesis. *Austin Journal of Anatomy* 1(4):2. * Senior/Corresponding Author

24- Ibrahim A and **El-Hashash A*** (2015). Lung stem cell behavior in development and regeneration.

E. Journal of Stem Cell Research and Therapy 1:1-13. * Senior/Corresponding Author

25- Ku J and **El-Hashash AH*** (2016). Molecular Control of the Mode of Cell Division: A View from Mammalian Lung Epithelial Stem Cells. A. Journal of Anatomy 3:3-6. * Senior/Corresponding Author

26- Abdel Meguid E, Ke Y, Ji J, **El-Hashash AH*** (2017). Stem cells applications In bone/tooth repair and regeneration:New insights, tools & hopes. Journal of Cellular Physiology. 233 (3): 1825–1835 *Senior/Correspond. Author

27- Ku J, and **El-Hashash AH*** (2017). Distribution and extracellular matrix environment of premelanoblasts during skin development in Xiphophorus hybrids. Anatomy & Physiology. 2017, 7:6. *Senior/Correspond. Author

28- El-Hashash AH* (2018). Intrinsic Vs Extrinsic Intrinsic Regulatory Mechanisms Of Lung Stem Cell Biology And Behavior. J. Stem Cells 12(4):187-190. *Senior/Corresponding Author

29- Zhu, Y, Chen X, Yang X and **El-Hashash, AH*** (2018). Stem Cells in Lung Repair and Regeneration: Current Applications and Future Promise. Journal of Cellular Physiology (*Accepted*) *Senior/Correspond. Author.

30- El-Hashash AH* (2018). Cell and Molecular Biology and Mechanisms of Early Nephrogenesis. J. Cell Biology & Metabolism (*Accepted*). *Senior/Correspond. Author

31- Zhu Y, Zhao Y, Li J, Song J, Lin B, **El-Hashash AH***, Yang X (2018).The role of Th1/Th2/Th17 in acute exposure of PM 2.5 induced cardiopulmonary injury in Balb/c mice. Journal of Cellular Physiology (*Submitted & under review for re-submission*) *Senior/Correspond. Author

32- Chen Y, Wu B , Yu D, Du X, Yu Y, Zhu S, Sun H, Zhang S, Zhou J, Bunpetch V, **El-Hashash AH**, Ouyang H (2018). Chemical Reprogramming of Fibroblasts into Chondrocytes for Mouse Knee Joint Cartilage Regeneration. PNAS (*Submitted & under review for re-submission*).

33- Yin Z, An C, Lin J, Liu M, Wu B, Jin K, Han S, **El-Hashash AH**, Chen X, Ouyang H (2018). Single cell RNA sequence discovers the hierarchy of connective tissue progenitor cells. Nature Cell Biology (*Submitted & under review for re-submission*).

Other Manuscript in Preparation:

34- Ibrahim A , Elshahawy, S and **El-Hashash A***. Molecular effects of Eya1 protein phosphatase on PKC ζ and Numb in lung epithelial stem cells (in *preparation for Biology of the Cell*). *Senior/Corresponding Author

35- Reddy R, Tefft D, Berika M, Pardo A, Selman M and **El-Hashash A***. Epithelial-mesenchymal interactions control cell fate and behavior of epithelial stem cells and lung fibrosis (in preparation for *Science Signaling*). * Senior & Corresponding Author

36- Army A, and **El-Hashash A***. Functions of stem cell niches in adult stem cell behavior: A review. *Senior/Corresponding Author

Book Chapters

37- **El-Hashash AH***. Asymmetric Cell Divisions of Stem/Progenitor Cells. In: Warburton D, editor. Stem Cells, Tissue Engineering and Regenerative Medicine. New Jersey: World Scientific Publishing Co. 2015. 552pp.*Senior/Corresponding Author

- 38- El-Hashash, AH***. “Stem cells, developmental biology and reparative/ regenerative medicine: tools and hope for better human life”. In *Developmental and Stem Cell Biology in Health and Disease*. Bentham Science Publisher, USA 2016, Vol. 1, 3-5. * Senior/Corresponding Author
- 39- Berika M, Ku J Huang, H, El-Hashash, AH***. “Gene and Signals Regulating Stem Cell Fate”. In *Developmental and Stem Cell Biology in Health and Disease*. Bentham Science Publisher, USA 2016. Vol. 1, 36-48. * Senior/Corresponding Author
- 40- Elshahawy S, Ibrahim A, Soliman, S, Berika, M, and El-Hashash, AH***. “Behavior and Asymmetric Cell Divisions of Stem Cells”. In *Developmental and Stem Cell Biology in Health and Disease*. Bentham Science Publisher, USA 2016. Vol. 1, 81-104. * Senior/Corresponding Author
- 41- Ku J, Alhassen W, Huang H, Soliman S, and El-Hashash, AH***. “Adult Stem Cell Niches and Their Regulatory Molecular Mechanisms”. In *Developmental and Stem Cell Biology in Health and Disease*. Bentham Science Publisher, USA 2016. Vol. 1, 105-119. * Senior/Corresponding Author
- 42- Majmudar D, Gilani S, Ibrahim A, Castillo J, and El-Hashash, AH***. “Stem cell regulatory mechanisms during wound healing and cancer”. In *Developmental and Stem Cell Biology in Health and Disease*. Bentham Science Publisher, USA 2016. Vol. 1, 120-141. * Senior/Corresponding Author
- 43- El-Hashash, AH***. Neural crest stem cells: a hope for neural regeneration. In: Turksen K & Abdelalim, E, editors. *Recent Advances in Stem Cells: From Basic Research to Clinical Applications*. Berlin, Germany: Springer Science Publisher. 2016. 269pp. * Senior/Corresponding Author
- 44- Abdel Meguid E and El-Hashash AH***. Lung cancer stem cells: clinical anatomy insights from cases suffering from lung cancer. In Pham P & El-Hashash AH, editors. *Stem Cells For Cancer And Genetic Disease. Treatment*” (2018). Berlin, Germany : Springer Science Publisher (Springer-Nature) 2018. (*Submitted*). * Senior/Corresponding Author
- 45- Ku J and El-Hashash AH***. Stem Cell Roles and Applications in Genetic Neurodegenerative Diseases. In Pham P & El-Hashash AH, editors. *Stem Cells For Cancer And Genetic Disease. Treatment*” (2018). Berlin, Germany : Springer Science Publisher (Springer-Nature) 2018. (*Submitted*). * Senior/Corresponding Author
- 46- Abdel Meguid E and El-Hashash AH***. The Anatomical and Functional Role of Stem Cells in Cancer and their Potential Therapeutic Applications. In Pham P & El-Hashash AH, editors. *Stem Cells For Cancer And Genetic Disease. Treatment*” (2018). Berlin, Germany : Springer Science Publisher (Springer-Nature) 2018. (*Submitted*). * Senior/Corresponding Author

Books

- 47- El-Hashash, Ahmed H. 2016 (Editor)** “Developmental and Stem Cell Biology in Health and Disease”. Madison USA: Bentham Science Publisher. 249p.
- 48- El-Hashash, Ahmed H. (Author)** “ Lung Stem Cell Behavior”. Springer Science Publisher, (Springer-Nature) Germany. 2018.
- 49- Phuc Pham & El-Hashash, AH.(Editor)**. “Stem Cells for Cancer and Genetic Disease. Treatment”. Springer Science Publisher (Springer-Nature), Germany. 2018.
- 50- El-Hashash, Ahmed H. & Eiman Abdel Magid (Author)**. “The Lung: Developmental Morphogenesis, Mechanobiology and Stem Cells”. Imperial College Press/World Scientific Publish, UK. 2019. (*Submitted, will be published in 2019*).

51- El-Hashash, Ahmed H. (Author) “Stem cell Innovation in Human Health and Disease”, CRC Press/ Tylor & Francis Publishing Group, UK. 2019. (*Will be submitted in Nov. 2018 & published in 2019*).

Recent Conference Abstracts

52- El-Hashash A.H. Functions of Eya1 phosphatase in lung stem cell behavior. Annual Meeting of California Institute of Regenerative Medicine, March 2009, San Francisco, California, USA.

53- Carraro, G, Turcatel G, El-Hashash, AH, Warburton, D. miR-17 regulates embryonic lung development. American Thoracic Society International Conference, May 2009, San Diego, USA.

54- El-Hashash A.H. Molecular regulation of lung stem/progenitor cell behavior,. International Conference of the Society of Stem Cell Research, June 2010, San Francisco, California, USA.

55- El-Hashash A.H. Tructal G, Warburton, D. Eya1 phosphatase is critical for lung stem cell fate and behavior. Annual Conference of The Society of Developmental Biology, May 2011, Honolulu Hawaii, USA.

56- El-Hashash A.H. Tructal G, Warburton, D. Eya1 is a novel regulator of the balance between lung stem cell self-renewal and differentiation”. International Conference on Lung Stem Cell and Regeneration, July 2011, Vermont University, Vermont ,USA.

57- El-Hashash A.H. Molecular control of lung stem cell behavior. The 5th Annual Congress of Regenerative Medicine and Stem Cells, Dec., 2012, Guangzhou, China.

58- Lu K, Ready R, El-Hashash A.H. Abrogation of Eya1/Six1 disrupts lung morphogenesis and causes remodeling. International Society of Stem Cell Research (ISSCR) Conference, June 2013, Boston, USA.

59- El-Hashash A.H, Warburton D Protein phosphatase regulation of apical-basal polarity as a new mechanism for lung epithelial progenitor cell behavior and protection against lung fibrosis. The Gordon Research Seminar/Conference, August 2013, New Hampshire, USA.

60- El-Hashash A.H. Stem Cell Behavior in Development and Regeneration: To Balance or Imbalance. The 29th International Multidisciplinary Medicine Era Conference. March 2014, Tanta University School of Medicine, Egypt.

61- El-Hashash A.H. Balancing stem cell behavior: applications in tissue development, repair and regeneration during heath and diseases. The 2nd International Biotechnology Conference, May 2014, The National Research Centre, Cairo, Egypt.

62- El-Hashash A.H, Reddy R, Lu K. Protein phosphatase regulation of apical-basal polarity as a new mechanism for lung epithelial progenitor cell behavior and regeneration. The Thomas L. Petty Aspen Lung Conference, 57th Annual Meeting on "Rebuilding the Injured Lung, June 2014, Aspen, Colorado, USA.

63- El-Hashash A.H. Molecular control of stem cell behavior and application in tissue repair and regeneration. The 3rd International Conference on Tissue Science and Regenerative Medicine, Sept. 2014, Valencia, Spain.

64- El-Hashash A.H. Balancing stem cell behavior and fate in the lung during repair and regeneration. Health and Life International Conference, Nov. 2014, Nasr City, Cairo, Egypt.

65- El-Hashash A.H. Balancing stem cell behavior as a novel gene- and stem cell-based strategy for the treatment of pulmonary Fibrosis, and spinal cord injuries. The 30th Annual Congress of Tanta University medical School : 2nd International Conference Multidisciplinary Medicine Era II, May 2015, Tanta, Egypt

66- Ibrahim A, El-Hashash A.H. Eya1 and aPKC ζ protein-protein interaction is critical for proper epithelial morphogenesis and prevents tissue hypoplasia” The 20th Saban Institute Annual Poster Session, June 2015, Los Angeles, California USA

67- El-Hashash A.H. Protein phosphatase regulation of apical-basal polarity as a new mechanism for Lung epithelial stem cell behavior and protection against lung fibrosis. The 3rd Annual International Conference on Biology, Athens Institute for Education and Research, June 2016 “ Athens, Greece.

68- El-Hashash A.H. Proper establishment of epithelial polarity as a new mechanism for lung stem cell behavior and attenuation of lung diseases. The 4th Annual International Conference on Biology, Athens Institute for Education and Research, June 2016 “ Athens, Greece,

69- El-Hashash A.H. Mechanisms of lung stem cell polarity and behavior in lung development, repair/regeneration and attenuation of lung diseases. The 11th World Congress of Regenerative Medicine & Stem Cell, Nov.14-16, 2017, Singapore.

70- El-Hashash A.H. Epithelial stem cell polarity: a new target for attenuation of lung diseases. The Global Conference on Stem Cell and Regenerative Medicine, August 14-16, 2017, Barcelona, Spain.

71-El-Hashash A.H. Proper establishment of epithelial polarity as a new mechanism for lung stem cell behavior (Invited Speaker). International Biology Conference (ATINER), June 2018, Athens, Greece.

Part V: Community Activities & Services

Through his work on stem cell behavior in health and diseases and tissue morphogenesis, Prof. El-Hashash not only been involved in research & development but also in the education of the local community on health issues related to stem cell associated diseases and congenital birth defects and the latest research advances in these fields. This education is in the form of presentations and supporting student interns and both summer and high school students to gain hands-on research experience in cutting-edge biomedical research. In addition, Prof. El-Hashash continues to give tours of his labs to various groups and individuals as a way to educate them about the exciting research taking place at University of Southern California/CHLA in USA

Below you will find a few examples of some community activities & services:

Local High Schools, Colleges and Universities: Prof. El-Hashash has given many presentations and attended meetings on stem cell behavior in health and diseases, as well as stem cell associated diseases and congenital birth defects to student groups (e.g., Burbank College, California State Polytechnic University, Pomona, California State University, Los Angeles, California State University San Bernardino)

Newspapers & Media Press: Prof. El-Hashash’s research works and novel discoveries have been covered by online media, press release and media release (some are attached at the end of this C.V.), including <http://www.reuters.com/article/idUS199471+02-Jul-2012+BW20120702>, <http://www.reuters.com/article/idUS252941+05-May-2011+BW20110505>, <http://www.reuters.com/article/idUS233986+29-Mar-2011+BW20110329>, <http://www.businesswire.com/news/home/20110505007282/en/>, <http://www.genengnews.com/gen-news-highlights/researchers-uncover-enzyme-necessary-for-lung-development/81244903/?kwd=Tissue%20Solutions>, <https://www.youtube.com/watch?v=VuBkrDcJF6g>, <http://slashnews.co.uk/news/2011/07/05/6121/Egyptian-Breakthrough-in-Stem-Cells>.

International TV and Newspapers: Prof. El-Hashash’s research works and novel discoveries have been covered by by some international media, including Nile TV (Cairo, Egypt; <https://www.youtube.com/watch?v=sH97cl9A-s>), Delta TV (Tanta City, Egypt), Egypt 25 TV (October City, Egypt; <https://>

www.youtube.com/watch?v=q6IIUUh4PNA), Egypt TV Channel 2 (Cairo Egypt; <https://www.youtube.com/watch?v=wLYRKPkEhxo>), Al Shorouk and Al Jamhouria Newspapers, Egypt.

Community Support Groups: Prof. El-Hashash has been involved in educating local community support groups and youth clubs on the work his division has been doing on stem cells and their applications in regenerative medicine, as exemplified by this lecture: <https://www.youtube.com/watch?v=rh-2TPrb84I>.