UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES
GRADUATE FACULTY APPLICATION

1. Name: Justin Wai Chung Leung

2. UAMS Graduate Program Sponsor: Robert L. Eoff Major field: Biochemistry

3. Present UAMS academic title or administrative position: Assistant Professor

Date appointed this rank/position: 12/15/201 Employed by: Department of Radiation Oncology

4. **Comments of Department Chair/Head or Program Director including: evidence of scholarly development, effectiveness as a teacher, quality of publications and reallocation of duties if this application is approved.**
Dr. Leung is well-qualified to serve as a member of the Graduate Faculty at UAMS, as evidenced by his outstanding publication record, funding through the K22 award, and his commitment to education and training. I wholeheartedly support his application.

Robert L. Eoff — 1/25/18
Department Chair/Head or Program Director — Date — Graduate Council Representative

I have read the comments of my Department Chair/Head or Program Director and I do, do not (circle one) wish to supply additional information in support of my application.

Justin Leung — 1/25/2018
Applicant's Signature — Date

Approvals

Chair, Graduate Faculty Committee — Date

X Chair, Graduate Council — Date

Robert B. Moore — 2-20-2018
Dean of the Graduate School — Date

Approved 5/30/96
Updated 02/02/06

INSTRUCTIONS FOR COMPLETION OF THE COMPUTERIZED FORM FOR APPLICATION TO THE UAMS GRADUATE FACULTY

1. Please read the form carefully and answer all questions. The form begins on the next page.

2. The form has been designed with fields for your responses, and these are indicated in blue and gray shading. Use the "tab" key to move between fields. The form will automatically expand to accommodate your entries. IF YOU NEED HELP IN ANY OF THE FIELDS, PRESS THE F1 KEY AND A HELP WINDOW WILL OPEN.

3. When you have completed the form, save it as a document on your own disk for future reference.

4. Print the document, and then obtain the appropriate signatures before submitting the form to the Graduate Office.

Approved 5/30/96
Updated 02/02/06

5. **List your planned involvement in graduate education (courses, theses, dissertations):**

- I will actively participate in teaching graduate student classes (detail will be provided after discussing with the chair of my secondary appointment in the Department of Biochemistry and Molecular Biology)
- I will involve in theses and dissertation committee for the institute.

6. **Briefly summarize your experience in graduate-level classroom teaching:**

I was a teaching assistant at the University of Hong Kong (see CV.) with experience in teaching medical students in a large classroom setting. I also have experience in teaching graduate students at the University of Texas at Austin in a relatively smaller group.

7. **Briefly summarize your experience in research and student research mentoring:**

My research mainly focuses on studying chromatin-based DNA repair pathway using molecular and cell biology approaches. My expertise lies in molecular cloning, genome editing, cell culture, con-focal microscopy, protein purification and biochemistry. My long-term goal is to understand the regulation of the DNA damage response pathway. Throughout my postdoctoral training, I continuously served as a graduate student mentors for high school, undergraduate and master student interns as well as rotation students and graduate students. Our collaborations yielded several peer review publications.

8. **Attach Curriculum Vita** showing educational background (including institutions attended, degrees awarded and dates), honors or awards received, scholarly or professional organization affiliations, teaching experience (give school, dates and advanced and graduate subjects taught), including student theses and/or dissertations supervised. Cite publications and research in progress.

Curriculum Vitae

JUSTIN WAI CHUNG LEUNG, Ph.D

University of Arkansas for Medical Sciences	Cell Phone:	(832) 341-1083
Department of Radiation Oncology	Email:	jwleung@uams.edu
Winthreop P. Rockefeller Cancer Center	Website:	leunglaboratory.weebly.com

PROFESSIONAL WORK EXPERIENCE

Assistant Professor Current
University of Arkansas for Medical Sciences
Department of Radiation Oncology

Postdoctoral fellow
University of Texas at Austin 2013-2017
Department of Biosciences
Institute of Cellular and Molecular Biology
Advisor: Dr. Kyle Miller

Postdoctoral fellow
Yale University 2008-2013
Department of Therapeutic Radiology/
MD Anderson Cancer Center
Experimental Radiation Oncology
Advisor: Dr. Junjie Chen

EDUCATION

The University of Hong Kong 2003-2007
Ph.D. Institute of Molecular Biology/ Department of Anatomy
Dissertation: " The role of Endothelial ET-1 in cerebral ischemic stroke"
Advisor: Dr. Sookja K Chung

Hong Kong University of Science and Technology 2001-2003
M.Sc. Department of Biochemistry/Biotechnology

Hong Kong University of Science and Technology 1998-2001
B.Sc. Department of Biochemistry

HONORS AND AWARDS

NIH National Ccancer Insstitute Transition Career Development Award (K22) 2017-2020
Impact Score:20

National Science Foundation: Travel Grant 2016
Gordon Research Seminar: Molecular Interplay of Chromatin Organization, Replication and Repair

Croucher Foundation: Travel Grant
Gordon Research Conference: Genomic Instability 2016

Postdoctoral Training Grant 2014-2016
Cancer Prevention Research Institute of Texas (CPRIT)

Best Poster Presentation 2014
Gordon Research Conference: Genomic Instability

Conference Travel Award 2014
Gordon Research Conference: Genomic Instability

RESEARCH INTERESTS

Cancer Biology, Chromatin Biology, Epigenetics and their connections to the DNA damage repair (DDR) pathway. My research intersts focused on diciphering the molecular mechanisms of DNA damage response and repair machinery. My long term goal is to define the regulatory protein landscape at the DNA damage sites by proteomic and genetic studies and to identify diagnostic and therapeutic target within the DDR pathway for cancer treatment.

TEACHING EXPERIENCE

Graduate student mentor 2013-present
University of Texas at Austin
Institute of Cellular and Molecular Biology

Guest lecturer 2013
University of Texas at Austin
Institute of Cellular and Molecular Biology

Graduate student mentor 2010-2012
MD Anderson Cancer Center
Experimental Radiation Oncology

Teaching assistant 2004-2007
The University of Hong Kong, Hong Kong
Department of Anatomy

PUBLICATIONS

1. **Leung JW,** Emery LE, Miller KM. CRISPR/Cas9 gene editing of human histone H2A variants H2AX and macroH2A. ***Methods in Molecular Biology***. (in press)

2. **Leung JW**, Makharashvili N, Agarwal P, Pourpre R, Cammarata M, Cannon J' Sherker A, Durocher D, Brodbelt J, Paull TT & Miller KM. ZMYM3 regulates BRCA1 localization at damaged chromatin to promote DNA repair. ***Genes and Development***, 2017 Feb; 31:260-274.

3. O'Connor HF, Lyon N, **Leung JW**, Agarwal P, Swaim CD, Miller KM, Huibregtse JM. Tools for profiling ubiquitin ligases: ubiquitin-activated interaction traps (UBAITs). ***EMBO Reports***, 2015 Dec; 16(12):1699-712.

4. Gong F[1], Chiu L[1], Cox B, Aymard F, Clouaire T, **Leung JW**, Cammarata M, Perez M, Agarwal P, Brodbelt JS, Legube G & Miller KM. Screen identifies bromodomain protein ZMYND8 in chromatin recognition of transcription-associated DNA damage that promotes homologous recombination. ***Genes & Development***. 2015 Jan;29(2):197-211.

5. Huang Y, **Leung JW**, Lowery M, Matsushita N, Wang Y, Shen X, Huong D, Takata M, Chen J, Li L. Modularized functions of the Fanconi anemia core complex. ***Cell Reports***. 2014 Jun 26;7(6):1849-57.

6. **Leung JW**, Agarwal P, Canny MD, Gong, Robison AD, Finkelstein IJ, Durocher D & Miller KM. Nucleosome Acidic Patch Promotes RNF168- and RING1B/BMI1-Dependent H2AX and H2A Ubiquitination and DNA Damage Signaling. ***PLoS Genetics***, 2014 Mar 6;10(3):e1004178.

7. Wang Y, Han X, Wu F, **Leung JW**, Lowery MG, Do H, Chen J, Shi C, Tian C, Li L, Gong W.

Structure analysis of FAAP24 reveals single-stranded DNA-binding activity and domain functions in DNA damage response. ***Cell Research***. 2013 Oct; 23(10):1215-28.

8. Wang Y, **Leung JW**, Jiang Y, Lowery MG, Do HG, Vasquez KM, Chen K, Wang W, Li L. Functional divergence of Fanconi anemia genes. ***The FASEB Journal***. 2013 Apr; 27:451.3

9. **Leung JW,** Ghosal G, Wang W, Shen X, Li L, Chen J. Alpha thalassemia/mental retardaation syndrome X-linked gene product ATRX is required for proper replication restart and cellular resistance to replication stress. ***Journal Biological Chemistry***. 2013 Mar 1;288(9):6342-50.

10. Wang Y, **Leung JW**, Jiang Y, Lowery MG, Vasquez KM, Chen J, Wang W, Li L. FANCM and FAAP24 maintain genomic stability through cooperative as well as unique functions. ***Molelular Cell***. 2013 Mar 7;49(5):997-1009.

11. Wang J, **Leung JW**, Gong Z, Shi X, Chen J. PHF6 regulates cell cycle progression by supressing ribosomal RNA synthesis. ***Journal Biological Chemistry***, 2013 Feb 1; 288 (5):3714-83.

12. Fong KW, **Leung JW**, Li Y, Wang W, Ling F, Ma W, Liu Dan, Zhou S, Chung J. MTR120/KIAA1383, a novel microtuble-associated protein, promotes microtubule stability and ensures cytokinesis. ***Journal of Cellular Science***. 2013 Feb 1;126(Pt 3):825-37.

13. Ghosal G, **Leung JW**, Nair BC, Chen J. PCNA-binding protein C1orf124 is a regulator of translesion synthesis. ***Journal Biological Chemistry***, 2012 Oct 5;287(41):34225-33.

14. **Leung JW**, Wang Y, Fong KW, Huen MS, Li L, Chen J. Fanconi anemia (FA) binding protein FAAP20 stabilizes FA complementation group A (FANCA) and participates in interstrand cross-link repair. ***Proceeding of the National Academy of Sciences.*** 2012 Mar 20;109(12):4491-6 .

15. Mi XS, Chiu K, Van G, **Leung JW**, Lo AC, Chung SK, Chang RC, So KF. Effect of Lycium barbarum Polysaccharides on the expression of endothelin-1 and its receptors in an ocular hypertension model of rat glaucoma. ***Neural Regeneration Research***. 2012 Mar 25; 7(9):645-51.

16. **Leung JW**, Leitch A, Wood JL, Shaw-Smith C, Metcalfe K, Bicknell LS, Jackson AP, Chen J. SET nuclear oncogene associates with microcephalin/MCPH1 and regulates chromosome condensation. ***Journal Biological Chemistry***. 2011 Jun 17;286(24):21393-400.

17. Huen MS, Huang J, **Leung JW**, Sy SM, Leung KM, Ching YP, Tsao SW, Chen J. Regulation of chromatin architecture by the PWWP domain-containing DNA damage-responsive factor EXPAND1/MUM1. ***Molelular Cell***. 2010 Mar 26;37(6):854-64 .

18. Richards MW, **Leung JW**, Roe SM, Li K, Chen J, Bayliss R. A pocket on the surface of the N-terminal BRCT domain of Mcph1 is required to prevent abnormal chromosome condensation. ***Journal of Molecular Biology***. 2010 Feb 5;395(5):908-15.

19. **Leung JW**, Wong WT, Koon HW, Mo FM, Tam S, Huang Y, Vanhoutte PM, Chung SS, Chung SK. Transgenic mice over-expressing ET-1 in the endothelial cells develop systemic hypertension with altered vascular reactivity. ***PLoS One***. 2011; 6(11):e26994.

20. Yeung PK, Lo AC, **Leung JW**, Chung SS, Chung SK. Targeted overexpression of endothelin-1 in astrocytes leads to more severe cytotoxic brain edema and higher mortality. ***Journal Cerebral Blood Flow & Metabolism***. 2009 Dec;29(12):1891-902.

21. Cheung SS, **Leung JW**, Lam AK, Lam KS, Chung SS, Lo AC, Chung SK. Selective over-expression of endothelin-1 in endothelial cells exacerbates inner retinal edema and neuronal death in ischemic retina. ***PLoS One***. 2011;6(10):e26184.

22. **Leung JW**, Chung SS, Chung SK. Endothelial endothelin-1 over-expression using receptor tyrosine kinase tie-1 promoter leads to more severe vascular permeability and blood brain barrier breakdown after transient middle cerebral artery occlusion. ***Brain Research***. *2009 Feb*: 1266: 121-129.

23. **Leung JW**, Ho MC, Lo AC, Chung SS, Chung SK. Endothelial cell-specific over-expression of endothelin-1 leads to more severe cerebral damage following transient middle cerebral artery occlusion. ***Journal Cardiovascular Pharmacology***. *2004 Nov; 44: S293-300.*

24. **Leung JW**, Xue H. Gamma aminobutyric acid (GABA) and herbal medicine: from classical to novel antidepressants. ***Currrent Drug Targets-CNS Neurological Disorders***. 2003 Dec;2(6):363-73.

25. Huen MS, Hui KM, **Leung JW**, Sigel E, Baur R, Wong JT, Xue H. Naturally occurring 2'-hydroxyl-substituted flavonoids as high-affinity benzodiazepine site ligands. ***Biochemical Pharmacology***. 2003 Dec 15;66(12):2397-407.

26. **Leung JW**, Zheng H, Huen M, Law SL, Xue H. Anxiolytic-like action of orally administered *dl*-tetrahydropalmatine in elevated plus-maze. ***Progress in Neuro-psychopharmacology and Biological Psychiatry***. 2003 Aug;27(5):775-9.

27. Huen MS, **Leung JW**, Ng W, Lui WS, Chan MN, Wong JT, Xue H. 5, 7-dihydroxy-6-methoxyflavone, a benzodiazepine site ligand isolated from *Scutellaria baicalensis* Georgi, with selective antagonistic properties. ***Biochemical Pharmacology***. 2003 Jul 1;66(1):125-32.

CONFERENCE PRESENTATIONS

1. "ZMYM3/ZNF261 promotes homologous recombination via BRCA1-A complex axis". Gordon Research Conference: Genomic Instability, 2016

2. "ZMYM3/ZNF261 promotes homologous recombination via BRCA1-A complex axis". Gordon Research Seminar: Molecular Interplay of Chromatin Organization, Replication and Repair, 2016

3. "Histone H2A variants and genome stability maintenance". CPRIT Annual Conference, 2015

4. "Regulation of DNA double-strand break repair via homologous recombination by the histone variant macroH2A". FASEB Science Research Conference: Genetic Recombination and Genome Rearrangements, 2015

5. "Histone H2A variants-inteacting proteins in DNA repair". CPRIT Annual Conference, 2014

6. "Acidic patch of heteromorphous Histone H2A variants mediates site-specific ubiquitinations". Gordon Research Conference: Genomic Instability, 2014

7. "ATRX is required for proper replication restart and cellular resistance to replication stress". Lost Pines Conference, 2012

8. "A UBZ domain-containing protein FAAP20 binds to FANCA and participates in interstrand crosslink repair". Abcam conference: Maintenance of Genome Stability, 2012

9. "SET protein associates with microcephalin/MCPH1 and regulates chromosome condensation". Keystone symposia: Genomic Instability and DNA repair, 2011

10. "Endothelium specific endothelin-1 over-expression induces superoxide production and angiogenesis after middle cerebral artery occlusion". Neuroscience conference, 2006

11. "Role of endothelial cell overexpressed endothelin-1 (ET-1) in mouse model of ischemic stroke". Twenty-forth Annual Scientific Meeting, 2005

12. "Characterisation of the transgenic mice with the over-expression of endothelin-1 only in endothelial cells as a model for experimental ischemic stroke". Eight International Conference on Endothelin, 2003