CURRICULUM VITAE

NAME:	Chi Yan, Ph.D.
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Education

Doctor of Philosophy Degree September 2011 ~ August 2017

Major: Inflammation, Cancer Cell Signaling and Immuno-oncology

Department of Microbiology and Immunology, Dalhousie University (DAL)

Master of Science in Applied Science Degree September 2009 ~ August 2011

Major: Molecular Biology & Phylogenetics ***(GPA 4.13)***

Department of Biology, Saint Mary's University (SMU)

Bachelor of Engineering Degree September 2004 ~ July 2008

Major: Microbial Technology in Biology ***(Top 10%)***

College of Life Science & Technology, HuaZhong Agricultural University (HZAU)

(Ranked 8th in Biology among all 2,879 universities in China by Education Ministry)

Research Experience

Title: Postdoctoral Scholar January 2018 ~ Present

Mentor: Dr. Ann Richmond, Professor, Vanderbilt University (VU)

Project: Combining targeted and immune therapy to improve patient response for melanoma and breast cancer.

Responsibility: My postdoctoral work in the Richmond lab at VU focuses on design and preclinical evaluation of novel therapeutic strategies for treatment of metastatic melanoma and breast cancer. My research aims to enhance the antitumor immune responses when combined with targeted and immune therapies (e.g., check-point inhibitors). I am currently characterizing Rigosertib, a Ras mimetic, in combination with IDO inhibitors and immune check-point blockade, in melanoma and breast cancer models. Skilled in immunocompetent & immunodeficient mouse models, patient derived xenograft models, and *ex vivo* 3D co-culture models of patient-derived organoids for drug screening and translational research. RNA-Seq, RAAP and multiparameter flow cytometry & multiplex immunohistochemistry for transcriptome, proteome and immunome screening.

Title: Postdoctoral Scholar September 2017 ~ December 2017

Mentor: Dr. Jun Wang, Associate Professor, DAL

Project: Identify the Mechanisms of IL-17RA-silencing-induced Mitochondrial Metabolism and Immunosuppression.

Title: Ph.D. student September 2011 ~ August 2017

Thesis: The Role of the Proinflammatory IL-17/IL-17R Axis in Tumor Growth and Tumor Microenvironment.

Mentor: Dr. Jun Wang, Associate Professor, DAL

Responsibility: Generate IL-17R stable knockdown and restoration cancer cell lines using lenti/retro-virus vector-mediated shRNA and DNA plasmid approaches. Characterization of limited dilution generated monoclonal cancer cell lines (qRT-PCR and digital droplet PCR). Tumorigenesis *in vitro* (MTT, Ki67 stain, growth curve, apoptosis and tumor sphere-forming assays) and *in vivo* (tumor growth and lung metastasis) using mouse models. Signaling pathway mapping (PCR microarray, ELISA, Luminex cytokine plex, Western blotting, EMSA and IHC). Characterization of mitochondrial biogenesis & metabolism using electron/fluorescent microscopy, Mitotracker and ATP assay. Immune profiling with mouse tissue samples by FACS with a focused functional and phenotypic subtyping of T cells, dendritic cells and macrophages. Bioinformatic analyses (on DNA copy number alteration, RNA/protein expression, epigenetic modification and correlation with clinical outcomes) of human patient samples via online databases, such as NCBI-GEO, Oncomine and cBioportal.

Won the Dalhousie Doctoral Thesis Award for "the best thesis submitted by Doctoral students in the 2017 calendar year".

Title: M.Sc. student September 2009 ~ August 2011

Thesis: Molecular Evolution and Origin of Tetraploid *Elymus* Species.

Mentor: Dr. Genlou Sun, Professor, SMU

Responsibility: Independently conducting primer design (Primer 6) and PCR to amplify three single copy nuclear genes and two chloroplast genes, cloning PCR products, and extracting plasmid DNA to get purified DNA sequences for sequencing, phylogenetic and genetic diversity analysis. Bioinformatics analyses (multiple sequence alignment, supervised and un-supervised clustering and constructing accurate phylogenetic trees) using ClustalX, MrBayes, PhyML, MEGA and TreeView.

Title: Cell Detection Technologist February 2008 ~ April 2009

Mentor: Dr. Xiaorong Sun, General Manager at Wuhan Landing Medical High-Tech Co., Ltd.

Responsibility: Cell DNA sample preparation and staining; Use DNA image cytometer to assess DNA ploidy for early cancer detection.

Title: Research Assistant & B.Eng. Student September 2007 ~ June 2008

Mentor: Dr. Ming Sun, Professor, Director of National Key Laboratory of Agricultural Microbiology, HZAU

Thesis: Pilot Study of the Relationship Between the Promoter of *cry28Aa* in *Bacillus thuringiensis* subsp. *finitimus* and the Phenomena of Spore-Crystal Connection.

Responsibility: Bacteria selecting, plasmid extracting, DNA withdrawing and hybridizing, PCR, Pulsed-Field Gel Electrophoresis of plasmids, Southern Blot and regular lab routine practice.

Won the top prize of Excellent Innovational Graduation Thesis Award of Hubei Province.

Title: Project Leader, succeed in the grant application for the **Student Research Foundation (SRF)** June 2006 ~ October 2007

Title: Teaching Assistant February 2006 ~ June 2006

Mentor: Dr. Yunguang Li, Professor, Director of Key Laboratory of Pesticide Chemistry, HZAU

Responsibility: Arranged work schedule for our project team to investigate the inhibitory ability of the *Nostoc* sphaeroides and methanolic extracts against three bacteria (*Cytophaga columnaris, Aeromonas hydrophila, Xanthomonas oryzae*) and one fungi strain (*Rhizoctonia solani*). Project leader in the SRF-funded project: "Studies on the Cultivation of *Nostoc commune* and *Nostoc sphaeroides*". Assisted in pre-class planning and grading of laboratory coursework, monitored and helped students in the laboratory practice.

Publications

1. **Yan,C**., Huang,WT., Boudreau,J., Mayavannan,A., Cheng,Z. & Wang,J. IL-17R deletion predicts high-grade colorectal cancer and poor clinical outcomes. *Int J Cancer*, 2019;145(2):548-558.
2. Xu,M., Almasi,S., Yang,Y., **Yan,C.**, Sterea,A., Rizvi,SAK., Shen,B., Richard,DC., Huang,P., Gujar,S., Wang,J., Zong,W., Trebak,M., Xu,H., Hiani,Y. & Dong,X. The lysosomal TRPML1 channel regulates breast cancer development by promoting mTORC1 and purinergic signaling pathways. *Cell Calcium*, 2019;79:80-88. **Co-first author**
3. Vilgelm,AE., Saleh,N., Shattuck-Brandt,R., Riemenschneider,K., Slesur,L., Chen,S., Johnston,CA., Yang,J., Blevins,A., **Yan,C.**, Johnson,DB., Al-Rohil,RN., Halilovic,E., Kauffmann,RM., Kelley,M., Ayers,GD. & Richmond,A. MDM2 antagonists overcome intrinsic resistance to CDK4/6 inhibition by inducing p21. *Sci Transl Med*, 2019; Aug 14;11(505).
4. **Yan,C**., Lei,Y., Lin,TJ., Hoskin,DW., Ma,A. & Wang,J. IL-17RC is critically required to maintain baseline A20 production to repress JNK isoform-dependent tumor-specific proliferation. *Oncotarget,* 2017; 8:43153-43168.
5. **Yan,C**., Yang,J., Saleh,N., Slesur,L., Piyevsky,B., Vilgelm,A., Richmond,A. Targeting the PI3K/AKT/mTOR pathway in breast cancer to enhance response to immune checkpoint inhibitors. Submitted to *Nat Commun*, June 2019.
6. Dawod,B., Gebremeskel,S., **Yan,C.**, Sappong,A., Johnston,B., Hoskin,D. & Wang,J. Myeloid-derived suppressor cell depletion therapy targets IL-17A-expressing mammary carcinomas. *Sci Rep*, May 2019. Re-submitted after a positive review.
7. **Yan,C**., Hu,Q., Hajjar,N., Kennedy,B., Murphy,P., Vidovic,D., Greenshields,AL., Alwayn,IP., Gujar,S., Marcato,P., Hoskin,DW. & Wang,J. Baseline interleukin-17 receptor A in cancer cells restrains JNK/cJun-dependent mitochondrial metabolism and immunosuppression. In preparation for *Cancer Cell*, 2019.
8. **Yan,C**., Saleh,N., Reddy,P., Richmond,A. Turning up the heat with Rigosertib to enhance melanoma response to immune

checkpoint inhibitors. In preparation for *Cancer Discov*, 2019.

9. **Yan,C**., Abdelmalek,M., Kampen,RM. & Wang,J. Prognostic analysis of IL-17RA and A20 in multiple human malignant neoplasms. In preparation for *EBiomedicine*, 2019.
10. **Yan,C**., Hu,Q. & Sun,GL. Nuclear and chloroplast DNA phylogeny reveals complex evolutionary history of *Elymus pendulinus*. *Genome*, 2014; 57: 97-109.
11. Hu,Q., **Yan,C**. & Sun,GL. Phylogenetic analysis revealed reticulate evolution of allotetraploid *Elymus ciliaris*. *Mol Phylogenet Evol.,* 2013; 69: 805-813. **Co-first author**
12. **Yan,C**. & Sun,GL. Multiple origins of allopolyploid wheatgrass *Elymus caninus* revealed by *RPB2*, *PepC* and *TrnD/T* genes. *Mol Phylogenet Evol.,* 2012; 64: 441-451.
13. **Yan,C**., Sun,GL., & Sun,D. Distinct origin of the Y and St genome in *Elymus* species: evidence from the analysis of a large sample of St genome species using two nuclear genes. *PLoS One*, 2011; 6: e26853.
14. **Yan,C**. & Sun,GL. Nucleotide divergence and genetic relationships of *Pseudoroegneria* species. *Biochem Syst Ecol*., 2011; 39: 309-319.

Service to the Scientific Community

Journal Reviews (https://publons.com/researcher/1456403/chi-yan/peer-review/)

Journal	Impact Factor	Year Reviewed	Number of Manuscript Reviewed
Journal of Clinical Investigation	13.251	2018	1
Clinical Cancer Research	10.199	2018	1
Cancer Research	9.130	2018 & 2019	2 & 1
International Journal of Cancer	7.360	2018	1
Cell Death & Disease	5.638	2019	2
Journal of Leukocyte Biology	4.224	2018	1
Cancer Prevention Research	4.021	2018	1
Cell Adhesion & Migration	3.566	2018	1
Molecular Medicine	3.340	2017	1
BMC Cancer	3.288	2019	5
Melanoma Research	3.135	2018 & 2019	1 & 1
Plos One	2.766	2018	2
Frontiers in Bioscience-LandMark	N/A	2019	3

Poster Judge

2019 18th Annual Cancer Symposium of Meharry Medical College/Vanderbilt Ingram Cancer Center Tennessee State University Cancer Partnership, Nashville, TN, USA.

Trainings and Certifications

2019 Management and Business Principles for Scientists (VU); ACUP Aseptic Survival Surgery Curriculum (VU)
Computational Approaches to Study Cancer Heterogeneity Workshop (VU); Python Programming Workshop (VU)
2018 Bioinformatics: Big Data in Biomedical Research (VU); Digital Pathology Imaging and KNIME Analytics Platform (VU);
2014 Transportation of Dangerous Goods Class 7 (DAL); Radiation Safety Training (DAL)
2013 Introduction to Anesthesia (DAL); Introduction to Aseptic Surgical Technique (DAL)
2011 The Mouse: Recommended Technical Procedures (DAL)
2006 National Computer Rank Examination Grade II Visual BASICS (The Ministry of Education of China)

Honors and Awards

- 1st place award in recognition of excellence in cancer research and an outstanding poster presentation, Vanderbilt Ingram

Cancer Center retreat 2019, Nashville, TN, USA

- Best poster presentation award, 13th Vanderbilt Postdoctoral Association Annual Symposium, 2019, Nashville, TN, USA
- Award for top peer-reviewed high-scoring abstract, 18th Annual Retreat for Cancer Research, Vanderbilt Ingram Cancer Center 2018, Nashville, TN, USA
- 2nd place award in recognition of excellence in cancer research and an outstanding poster presentation, Vanderbilt Ingram Cancer Center retreat 2018, Nashville, TN, USA
- Dalhousie Doctoral Thesis Award Winner for "the best thesis submitted by Doctoral students in the 2017 calendar year", 2018
- Nominee for 2018 National Distinguished Dissertation Award granted by the Canadian Association for Graduate Studies (CAGS) and sponsored by Proquest-UMI (University Microfilms International), Canada
- Travel Award from the Summit for Cancer Immunotherapy 2017 meeting in Gatineau, Québec, 2017
- CRTP Travel Award from the Beatrice Hunter Cancer Research Institute for AACR annual meeting in Washington D.C., USA, 2017
- 1st Prize of Poster Presentation in the 2016 BHCRI/TFRI Cancer Research Conference in Atlantic Canada, 2016
- Thompson Family Scholarship Travel Award at IWK Health Centre, 2016
- IWK Graduate Scholarship Award (ranked top 4 of all 26 applications received), 2013-2014, 2014-2015
- CRTP Travel Award from the Beatrice Hunter Cancer Research Institute for CCRC 2013 in Toronto, ON, Canada. 2013
- Trainee award from the Beatrice Hunter Cancer Research Institute with funds provided by the Cancer Research Training Program as part of The Terry Fox Foundation Strategic Health Research Training Program in Cancer Research at CIHR (ranked 3rd out of 17 from the graduate student applications received), 2011-2012, 2012-2013
- Most quickly delivered oral presentation - Microbiology and Immunology symposium, 2012
- Faculty of Graduate Studies and Research Scholarship, SMU, 2009-2010, 2010-2011
- Excellent Graduate Student in College of Life Sci. & Tech., for integrated ranking 3rd in Microbial Technology major, HZAU, 2008
- Excellent Student for ranking 3rd in College of Life Sci. & Tech., HZAU, four consecutive years, 2004-2008
- Excellent Performance in Learning, for ranking 3rd in Microbial Technology major, HZAU, four consecutive years, 2004-2008
- Excellent Undergraduate Scholarship, HZAU, four consecutive years, 2004-2008
- National Contest in Physics for Middle School, First Prize of Hubei Province, China, 2001

Conference Presentations

Yan,C., Ho,L., Liu,J & Wang,J. IL-17RA-deletion enhances triple-negative breast cancer to metformin treatment. 2019 Canadian Cancer Research Conference (Ottawa, ON, Canada), Nov 2019. Poster Presentation.

Yan,C., Reddy,E.P, & Richmond.A. Rigosertib, a Ras mimetic, inhibits melanoma cell viability and synergizes with anti-PD1 to promote anti-tumor immune responses. 2019 AACR Annual Meeting (Atlanta, USA), 2019 Vanderbilt Ingram Cancer Center Retreat (Nashville, USA), 2019 Vanderbilt Postdoctoral Association Annual Symposium (Nashville, USA). Poster Presentation.

Yan,C. & Richmond.A. Multi-kinase inhibitor Rigosertib inhibits melanoma cell viability and synergizes with anti-PD1 to promotes anti-tumor immune responses. 18th Annual Retreat for Cancer Research, Vanderbilt Ingram Cancer Center 2018. Platform Presentation.

Yan,C. & Richmond.A. Multi-kinase inhibitor Rigosertib inhibits melanoma cell viability and promotes anti-tumor immune responses. Vanderbilt Ingram Cancer Center retreat 2018, Nashville, TN, USA. Poster Presentation.

Yan,C., Hu,Q., Alwayn,IPJ. & Wang,J. Down-regulation of IL-17RA expression in cancer cells promotes mitochondrial metabolism and immunosuppression. June 25-28th, 2017. Cancer Immunotherapy (Summit4CI) Conference 2017. Gatineau, Québec, Canada. Selected Speed Platform and Poster Presentations.

Yan,C., Lei,Y., Greenshields,AL., Hoskin,DW., Lin,TJ. & Wang,J. Baseline IL-17 receptor signaling is essential for controlling aberrant JNK-dependent cellular proliferation via maintenance of endogenous level of ubiquitin-editing enzyme A20. Apr 1-5th, 2017. AACR Anneal Meeting. Washington D.C., USA. Poster Presentation. Nov 7-8th, 2016. The 2016 BHCRI/TFRI Cancer Research Conference in Atlantic Canada. Halifax, NS, Canada. Poster Presentation. Oct 27-30th, 2016. Translational Control of Cancer: A New Frontier in Cancer Biology and Therapy. San Francisco, California, USA. Poster Presentation.

Yan,C. & Wang,J. IL-17RA and IL-17RC signals in B16 tumor cells shape tumor microenvironment via common and distinct immune mechanisms. June 26th-29th, 2016. Cancer Immunotherapy (Summit4CI) Conference 2016. Halifax, NS, Canada. Poster Presentation.

Yan,C., Lei,Y., Pan,L., Lee,P. & Wang,J. IL-17RA- and IL-17RC-associated signals differentially regulate tumor cell cycle arrest and proliferation in a c-Jun-dependent manner. May 13th, 2014. Graduate Student Research Day. April 29th, 2014. Department of Pediatrics Research Day. Selected for Platform Presentation. Halifax, NS, Canada.

Yan,C., Lei,Y., Pan,L., Lee,P., Halperin,SA. & Wang,J. The role of IL-17RA- versus IL-17RC-associated signals in tumorigenesis. November 3rd-6th, 2013. Canadian Cancer Research Conference 2013. Toronto, ON, Canada. Poster Presentation. April 2013. Department of Pediatrics Research Day. November 2012. 4th BHCRI Annual Cancer Research Conference. Halifax, NS, Canada. Poster Presentation.

Yan,C., Halperin,SA. & Wang,J. Investigating the role of IL-17/IL-17R axis in regulating the tumor microenvironment. May 2012. Graduate Student Research Day. April 2012. Department of Pediatrics Research Day. Halifax, NS, Canada. Poster Presentation.

Yan,C. & Sun,G. Effects of intraspecific variation in determining the genome origin and duplication dynamic of tetraploid *Elymus* StY species. July 2011. Plant Canada 2011. Halifax, NS, Canada. Poster Presentation.

Supervisory Experiences

- 2018 — Katelyn Atkinson: Summer Studentship (VU)
- 2016-2017 — Nicole Hajjar: MICI3620.03 Experiential Learning in Microbiol & Immunol (DAL)
- 2015-2016 — Rachel Kampen: MSc. with CRTP Studentship.
  Nicole Hajjar: 2016 Summer Studentship (DAL)
- 2014-2015 — Rachel Kampen: BSc. Honours student degree; 2015 Summer Studentship (DAL)
  Farah Mershati: MICI3620.03 Experiential Learning in Microbiol & Immunol;
  2015 Summer Studentship (DAL)
- 2013-2014 — Dakota Rogers: Co-op work term; Canadian Breast Cancer Foundation Studentship Awards (DAL)
- 2012-2013 — Yahua Song: Volunteer as research assistant and lab technician (DAL)
  Fatma Ashour: MICI3620.03 Experiential Learning in Microbiol & Immunol (DAL)
  Sheren Anwar Siani: Canadian Breast Cancer Foundation – Atlantic Region Studentship Awards (DAL)
- 2010-2011 — Laura Shepherd: BSc. Honours student degree (SMU)

Extracurricular Roles

- 2019-present — Member of the American Association of Immunologists (AAI)
- 2018-2019 — Member of Society for Immunotherapy of Cancer (SITC)
- 2016-present — Associate Member in the American Association for Cancer Research (AACR)
- 2011-present — Member of the Beatrice Hunter Cancer Research Institute (BHCRI)
- 2015 — Teaching Assistant and Tutor of MICI3115 Immunology at Dal
- 2012-13, 2016-17 — Volunteer for Terry Fox Run for Cancer Research, Halifax, Canada
- 2009-2011 — Teaching Assistant of Advanced Molecular Biology, Genetics, Molecular and Cell Biology (SMU)
- 2009-2011 — Molecular Biology Lab Technician supported by Student Employment Experience Program (*SEEP*) (SMU)
- 2005-2006 — Founder and Core Member, Biomedical Club; Monitor of my class (HZAU)
- 2004-2005 — Union Leader, Department of Science and Technology in Student Union Council (HZAU)
  Core Member, The National Flag Guard of Honor; Core Member, basketball and volleyball team (HZAU)
- 1990-1995 — Swimmer, Ranked top 5 of Hubei Province in National Swimming Competitions