BIOGRAPHICAL SKETCH

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NAME: Fan Yeung

eRA COMMONS USER NAME (credential, e.g., agency login): FANYEUNG

POSITION TITLE: Program Manager

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Lee University, Cleveland TN	BS	05/1994	Biology & Chemistry
University of Virginia, Charlottesville VA	PhD	08/2001	Cellular & Molecular Biology
University of Virginia, Charlottesville VA	Postdoctoral	07/2005	Biochemistry
University of Colorado, Boulder CO	Postdoctoral	08/2012	Molecular, Cellular & Developmental Biology

A. Personal Statement

I have a strong background in cellular and molecular biology, with specific training and expertise in the areas of transcriptional regulation and signaling pathways in cells. My scientific journey has always been governed by my passion in understanding the molecular mechanisms underlying various disease models. During my graduate study, I investigated the molecular mechanisms of prostate cancer metastatic progression. After I received my PhD, I did my first post-doc investigating the roles of histone deacetylase in cancer cells survival. In my second post-doc, I moved into the cardiovascular field, focusing on the transcriptional regulation of myosin and its microRNA in cardiac and skeletal muscle cells.

I started teaching at Front Range Community College after I completed my second post-doc. As a passionate biology instructor, I seek to help my students to develop a love and appreciation for science. During my teaching career, I was nominated twice for teaching excellence at the college because I am adept at creating inclusive and collaborative learning communities in the classroom to ensure student success.

My 13+ years of research experience as a molecular and cellular biologist has provided me with the necessary skills to develop lab curriculums and to guide students with projects and assignments in the classroom. Some of my greatest achievements during these years were publishing an education research paper on the impact of active learning in community college students and receiving an NSF grant to create an inquiry-based lab curriculum to advance science education.

My contribution to science education goes beyond teaching, I received a TRiO instructor award at our college for helping many first-generation minority college students to pursue STEM education paths. I also collaborated with local university groups, biotech companies and institutes to offer science-related activities, such as field trips, seminars, and career fair, to students. Additionally, I routinely teach biotech training workshops to teach college instructors and high school teachers how to conduct biotech labs in the classroom. Furthermore, for more than 5 years I had been the science advisor and tutor for the Trio Upward bound program which serves low-income, first-generation, minority high school students. In fact, I considered the success of my students in

STEM as one of my greatest achievements in my career. The opportunity to guide and mentor these underprivileged, yet hard-working students is truly rewarding.

Recently completed project that I would like to highlight include:

NSF small ATE grant 2017-2020.
Biotech Jumpstart: Building Competency & Career Awareness through Scientific Inquiry
The goal of the project is to increase the local biotech workforce. Two inquiry-based biotech labs have been developed for high schools and community colleges science classes to build students biotech skills. Front Range Community College students serve as Learning Assistants to engage students' learning in the inquiry labs. Career exploration activities were organized to attract students to biotech careers.

Amgen Foundation grant 2013-2015
Amgen Biotech Experience: provided curriculum, equipment, professional development to over 50+ local high schools to perform genetic engineering labs in their classrooms.

B. Positions, Scientific Appointments, and Honors

Positions and Scientific Appointments

2023-present	Program Coordinator, Department of Molecular, Cellular & Developmental Biology, University of Colorado, Boulder CO
2012-present	Biology Instructor, Front Range Community College, Westminster, CO.
2017-2020	Co-principal investigator, National Science Foundation Small ATE grant.
2013-2015	Amgen Biotech Education coordinator. Amgen Foundation
2009-2012	Post-doctoral Fellow, Department of Molecular, Cellular & Developmental Biology, University of Colorado, Boulder CO
2003	General Biology Lab Instructor, Piedmont Community College, Charlottesville, VA.
2001-2006	Post-doctoral Fellow, Department of Biochemistry and Molecular Genetics, University of Virginia, Charlottesville, VA.

Honors and Awards

2017-2020	National Science Foundation Small ATE grant.
2012, 2017	Nominations for Teaching Excellence. Front Range Community College
2004-2006	NIH Postdoctoral Ruth L. Kirschstein National Research Service Award
2002	NIH Molecular and Cellular Biology Pre-doctoral Training Grant
1994	Graduate with Summa cum laude Honor, Lee University, Cleveland, TN
1994	Natural Science and Mathematics Departmental Award, Lee University, Cleveland, TN
1993	Summer Research Fellowship, Emory University, Atlanta, GA
1992	Chemistry Award, American Chemistry Society

C. Contributions to Science

1. As a Community College biology instructor, I had helped many underrepresented students to pursue STEM career paths by serving in both college and high school level TRiO programs. I have also involved in educational research looking at the impact of active learning on community college student success. Additionally, I wrote and received an NSF ATE grants to develop inquiry-based biotech labs for our college and local high schools to engage students in biotech field.

    a. Riedl A, **Yeung F**, Burke T. Implementation of a Flipped Active-Learning Approach in a Community College General Biology Course Improves Student Performance in Subsequent Biology Courses and Increases Graduation Rate. CBE Life Sci Educ. 2021 Jun;20(2):ar30.

2. For my PhD work I focused on elucidating the molecular mechanisms for the progression of prostate cancer from a hormone-dependent to a hormone-independent state. By studying the androgen-independent transcriptional regulation of the prostate specific antigen (PSA) gene promoter, I identified novel transcription factors and pathways that are essential for the androgen-independent activation of

the PSA promoter in prostate cancer cells. Furthermore, I also delineated the underlying mechanism responsible for prostate cancer metastasis to the bone. I discovered that metastatic prostate cancer cells exhibit osteomimetic properties by expressing bone-specific transcription factors which allow them to go and thrive in the bone environments.

a. **Yeung, F**., Li, X., Ellett, J., Trapman, J., Kao, C., and Chung L.W.K. "Regions of Prostate-specific Antigen (PSA) Promoter Confer Androgen-independent Expression of PSA in Prostate Cancer Cells." *J Biol Chem* 275(52):40846-40855. 2000
b. **Yeung, F**., Law, W.K., Jung, C., Yeh, C.H., Wang, R.X., Westendorf, J.J., Kao, C., and Chung L.W.K. "Regulation of Human Osteocalcin (hOC) Promoter in Hormone-independent Prostate Cancer Cells." *J Biol Chem*. 277(4):2468-76. 2002
c. **Yeung, F**., Chung L.W.K. "Molecular Basis of Co-targeting Prostate Tumor and Stroma." *J Cell Biochem Suppl*. 38:65-72. 2002
d. Chung LWK and **Yeung F**. "Super Osteocalcin promoter for the treatment of Calcified tumors and tissues." Patent number: 03/006621. 2002
e. 2002 Chung LWK, **Yeung F**, Kao, C. "Gene Expression Directed by a Super-PSA Promoter." Patent number: 0078224-A1. 2002

3. After receiving my Ph.D., I broadened my research to include cancer cell signaling. In one of my projects, I demonstrated that RelA/p65 activity is inhibited by the Class III HDAC-SIRT1 through deacetylation at lysine 310, which in turn promotes apoptosis in cancer cells. This study was awarded an NIH post-doctoral fellowship. In another project, I showed that acetylation of the mitogen-activated protein kinase kinase-1 (MEK1) stimulates its kinase activity, and that acetylated MEK1 is under the regulatory control of the sirtuin family members SIRT1 and SIRT2. My research suggested that acetylation of MEK1 has oncogenic potential.

    a. **Yeung, F**. J.E. Hoberg, C.S. Ramsey, M.D. Keller, D.R. Jones, R.A. Frye and M.W. Mayo. Modulation of NF-κB-dependent transcription and cell survival by the SIRT1 deacetylase. *EMBO J*. 23:2369-2386. 2004
    b. **F Yeung**, C S Ramsey, A E Popko-Scibor, D F Allison, L G Gray, M Shin, M Kumar, D Li, J A McCubrey and M W Mayo. Regulation of the mitogen-activated protein kinase kinase (MEK)-1 by NAD^+-dependent deacetylases. *Oncogene* 34, 798-804. 2015

4. For my second post-doc, I studied the transcriptional regulation of Myosin 7 promoter and its miR-499. To identify the transcription factors involved in regulating Myh7b/miR-499 gene expression, I have mapped the transcriptional start sites and identified an upstream 6.2 kb region of the mouse Myh7b gene whose activity mimics the expression pattern of the endogenous Myh7b gene both in vitro and in vivo. A distal E-box element and a proximal Ikaros site were identified as essential for Myh7b promoter activity in muscle cells. I showed that the myogenic regulatory factors, MyoD, Myf5 and Myogenin, bind to the E-box, while a lymphoid transcription factor, Ikaros 4 (Eos), binds to the Ikaros motif. Furthermore, MyoD and Eos form an active transcriptional complex on the chromatin to regulate the expression of the endogenous Myh7b/miR-499 gene. Therefore, I was able to indicate a novel role for Eos in the regulation of the myofiber gene expression.

    a. **Yeung F**, Chung E, Guess MG, Bell ML, Leinwand LA. Myh7b/miR-499 gene expression is transcriptionally regulated by MRFs and Eos. Nucleic Acids Res. 40(15):7303-18. 2012

Complete List of Published Work in MyBibliography: