**CURRICULUM VITAE**

**NAME:** Chenggang Wu, Ph.D.

**PRESENT TITLE:** Assistant Professor

**ADDRESS:** University of Texas Health Science Center

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**UNDERGRADUATE EDUCATION:**

Nanchang University, Nanchang, China;

Bachelor of Science, Microbiology, 2000

**GRADUATE EDUCATION:**

Nanchang University, Nanchang, China;

Dept. of Biology, M.S., 2000-2003

Chinese Academy of Sciences, Beijing, China;

Institute of Microbiology, Ph.D., 2003-2007

**POSTGRADUATE TRAINING:**

University of Oklahoma Health Sciences Center, Oklahoma City;

Department of Oral Biology, College of Dentistry, 2007-2009

(Supervisor: Dr. Fengxia Qi)

University of Texas Health Sciences Center, Houston;

Department of Microbiology & Molecular Genetics, 2009-2015

(Supervisor: Dr. Hung Ton-That)

**ACADEMIC APPOINTMENTS:**

Assistant Professor (started at April 1th, 2021)

Research Assistant Professor,

2019.10 – 2021.06 (at the lab of Dr. Danielle Garsin)

2018.08 – 2019.09

2015.09 –2018.07 (at the lab of Dr. Hung Ton-That)

University of Texas Health Sciences Center, Houston

Department of Microbiology & Molecular Genetics

**PROFESSIONAL ORGANIZATIONS:**

American Society for Microbiology, 2009-present

**JOURNAL REVIEWER:**

Archive of Oral Biology

Microbiology

Frontiers in Microbiology (Editorial Board)

Oral Disease

Science signaling

Journal of Bacteriology

PLOS ONE (Editorial Board)

Journal of Periodontal Research

Microbiological Research

**SPONSPRSHIP OF VISITING SCIENTISTS:** Caitlin A Brennan (Harvard University) 8/6/2018-8/12/2018

**SPONSPORSHIP OF SUMMER MEDICAL STUDENTS:**

Adam J Lazarus (UTHSC-HOUSTON, 2018)

**SPONSPORSHIP OF LAB TECHNICIAN:**

Alexis Bradford (2017)

Yan Wang (2017- 2019)

**PUBLICATONS:**

**A. Abstracts**

1. Sara D. Siegel, **Chenggang Wu** & Hung Ton-That (2015). *The signal peptidase LepB2 is required for LPXTG-containing substrates in Actinomyces oris*. Oral presentation at the 2015 Molecular Genetics of Bacteria and Phages Meeting, Wisconsin.
2. Chungyu Chang, Belkys C. Sanchez Martinez, Bryan Tran, **Chenggang Wu** &Hung Ton-That (2015). *Electron transport chain is linked to pilus assembly and polymicrobial interactions in the Gram-positive bacterium Actinomyces oris*. Poster presented at the 2015 Molecular Genetics of Bacteria and Phages Meeting, Wisconsin.
3. [Melissa E Reardon-Robinson](https://pubmed.ncbi.nlm.nih.gov/?term=Reardon-Robinson+ME&cauthor_id=24567409), **Chenggang Wu**, Arunima Mishra & Hung Ton-That (2013) *Pilus Hitchhiking by CafA, a Co-aggregation Factor Mediating Interbacterial Interaction.* Poster presented at the 2013 Microbial Adhesion & Signal Transduction Gordon Conference, Newport, RI.
4. **Chenggang Wu**, Arunima Mishra, Jinghua Yang, John O. Cisar & Hung Ton-That (2011). *The Tip Pilin Subunit FimQ Is Essential for Type 1 Fimbriae Assembly and Mediates Binding of Salivary Proline-rich Proteins in Actinomyces oris.* Poster presented at the 111th General Meeting of American Society of Microbiology, New Orleans, Louisiana.
5. Arunima Mishra, **Chenggang Wu**, John O. Cisar, Asis Das & Hung Ton-That (2010). *Molecular Basis of Actinomyces oris coaggregation with Oral Streptococci and Biofilm Formation.* Poster presented at the 110th General Meeting of American Society of Microbiology, San Diego, California.
6. Fengxia Qi & **Chenggang WU** (2009). *TnSmu2 of S. mutans encodes genes for biosynthesis of mutanobacin.* Poster presented at International Association for Dental Research & American Association for Dental Research & the Canadian Association for *Dental Research (IADR*/AADR/CADR) 87th General session. Miami, Florida.
7. **Chenggang Wu** & Fengxia QI (2008) *Calcium and stress regulate cia operon expression in Streptococcus mutans.* Poster presented at International Association for Dental Research/ the Canadian Association for *Dental Research* (IADR/CADR) 86th General session, Toronto, Canada**.**

**B. Refereed Original Articles in Journals**

1. **Wu C**, Karakuzu O & Garsin D. (2021) Tribbles Pseudokinase NIIPI-3 regulates intestinal immunity in *Caenorhabditis elegans* by controlling SKN-1/Nrf activity. ***Cell Reports*** 36(7): 109529, doi: 10.1016/j.celrep.2021.109529
2. **Wu C**\*, Chen Y, Scheible M, Chang C, Wittchen M, Lee J, Luong T, Tiner B, Tauch A, Das A\* & Ton-That H\*. (2021) Genetic and molecular determinants of polymicrobial interactions in *Fusobacterium nucleatum* ***PNAS*** June 8, 118 (23) e2006482118

\***Corresponding authors**

1. Peluso EA, Scheible M & Ton-That H, **Wu C**. (2020) [Genetic Manipulation and Virulence Assessment of *Fusobacterium nucleatum*.](https://www.ncbi.nlm.nih.gov/pubmed/32539234/)***Curr Protoc Microbiol***.  Jun;57(1):e104. doi: 10.1002/cpmc.104

\***Corresponding authors**

1. Gosschalk JE, Chang C, Sue CK, Siegel SD, **Wu C**, Kattke MD, Yi SW, Damoiseaux R, Jung ME, Ton-That H & Clubb RT. [A (2020) Cell-based Screen in *Actinomyces oris* to Identify Sortase Inhibitors.](https://www.ncbi.nlm.nih.gov/pubmed/32444661/)***Sci Rep***.  May 22;10(1):8520.
2. Chang C**\***, **Wu C\***, Osipiuk J, Siegel SD, Zhu S, Liu X, Joachimiak A, Clubb RT, Das A & Ton-That H. (2019)  [Cell-to-cell interaction requires optimal positioning of a pilus tip adhesin modulated by gram-positive transpeptidase enzymes.](https://www.ncbi.nlm.nih.gov/pubmed/31427528/)***PNAS***.  116(36):18041-18049

**\*Equal contribution**

1. Siegel S, Amer BR, **Wu C**, Sawaya MR, Gosschalk JE, Clubb RT, & Ton-That H. (2019). Structure and Mechanism of LcpA, a Phosphotransferase That Mediates Glycosylation of a Gram-Positive Bacterial Cell Wall-Anchored Protein. ***mBio***, 10(1), e01580-18. doi:10.1128/mBio.01580-18
2. **Wu C\***, Al Mamun AM, Luong TT, Hu B, Gu J, Lee JH, D'Amore M, Das A & Ton-That H**\***. (2018) Forward Genetic Dissection of Biofilm Development by Fusobacterium nucleatum: Novel Functions of Cell Division Proteins FtsX and EnvC. ***MBio***. Apr 24; 9(2). pii: e00360-18. doi: 10.1128/mBio.00360-18

**\*Corresponding authors**

1. Sanchez BC, Chang C, **Wu C**, Tran B & Ton-That H. (2017). Electron transport chain is biochemically linked to pilus assembly required for polymicrobial interactions and biofilm formation in the Gram-positive Actinobacterium *Actinomyces oris*. ***MBio***. Jun 20;8(3). pii: e00399-17. doi: 10.1128/mBio.00399-17.
2. Juárez-Vázquez AL, Edirisinghe JE, Verduzco-Castro EA, Michalska K, **Wu C**, Noda-García L, Babnigg G, Endres M, Medina-Ruíz S, Santoyo-Flores J, Carrillo-Tripp M, Ton-That H, Joachimiak A, Henry CS & Barona-Gómez F. (2017). Evolution of substrate specificity in a retained enzyme driven by gene loss. ***Elife***. Mar 31; 6. pii: e22679. doi: 10.7554/eLife.22679
3. Siegel S, **WU C\*** & Ton-that H**\***. (2016). A type I signal peptidase is required for pilus assembly in the Gram-positive, biofilm-forming bacterium Actinomyces oris. ***J Bacteriol***. 198(15): 2064-73

**\*Corresponding authors**

1. **Wu C\***, Reardon-Robinson M & Ton-That H. (2016). Genetic and cell morphology analyses of the Actinomyces oris srtA mutant. ***Methods Mol Biol***. 1440: 109-22.

**\*Corresponding author**

1. Reardon-Robinson M, Osipiuk J, Chang C, Wu C, Jooya N, Joachimiak A, Das A & Ton-that H. (2015). A disulfide bond-forming machine is linked to the sortase-mediated pilus assembly pathway in the Gram-positive bacterium Actinomyces oris. ***J Biol Chem***, 290 (35): 21393-405
2. WU C\*, Huang IH, Chang, C., Reardon-Robinson M, Das A & Ton-That H\* (2014). Lethality of sortase depletion in *Actinomyces oris* caused by excessive membrane accumulation of a surface glycoprotein. ***Mol. Microbiol***, 94(6): 1227-1241.

**\*Corresponding authors**

1. Reardon-Robison M\*, WU C\*, Mishra A\*, Chang C, Bier N, Das A & Ton-That H (2014). Pilus hijacking by a bacterial coaggregation factor critical for oral biofilm development. ***PNAS***, 111 (10):3835-40.

**\*Equal contribution**

1. WU C\*, Mishra A\*, Reardon M\*, Huang IH, Counts SC, Das A & Ton-That H (2012). Structural determinants of Actinomyces sortase SrtC2 required for membrane localization and assembly of type 2 fimbriae for interbacterial coaggregation and oral biofilm formation. ***J. Bacteriol***, 194(10):2531-9.

**\*Equal contribution**

1. WU C**,** Mishra A, Yang J, Cisar JO, Das A & Ton-That H. (2011). Dual function of a tip fimbrillin of *Actinomyces* in fimbrial assembly and receptor binding. ***J. Bacteriol***. 193(13):3197-3206.
2. Liu J\*, Wu C\*, Huang IH, Merritt J & Qi F (2011). Differential response of *Streptococcus mutans* towards friend and foe in mixed species cultures. ***Microbiology***, 157:2433-2444

**\*Equal contribution**

1. WU C & Ton-That H (2010). Allelic exchange in *Actinomyces oris* with mChery fluorescence counter-selection. ***Appl. Environ. Microbiol***.76 (17): 5987-9.
2. Mishra A\*, WU C\*,Yang J, Cisar JO, Das A. & Ton-That H (2010). The *Actinomyces* type 2 fimbrial shaft FimA mediates co-aggregation with oral stretpococci, adherence to red blood cells and biofilm development. ***Mol. Microbiol***. 77(4): 841-854

**\*Equal contribution**

1. WU C, Ayala E, Downey J, Merritt J, Goodman S & Qi F (2010). Regulation of the ciaXRH operon expression and identification of ciaR regulon in *Streptococcus mutans****. J. Bacteriol***. 192(18): 4669-79
2. WU C, Cichewicz R, Li Y, Liu J, Roe B, Ferretti J, Merritt J & Qi F (2010). The genomic island TnSmu2 of *Streptococcus mutans* encodes a NRPS-PKS gene cluster responsible for the biosynthesis of pigments involved in oxygen and H2O2 tolerance. ***Appl. Environ. Microbiol***.76 (17): 5812-56
3. Nguyen T, Zhang Z, Huang IH, **WU C**, Merritt J, Shi W & Qi F (2009). Gene involved in the repression of mutacin I production in *Streptococcus mutans*. ***Microbiology***, 155: 551-556.
4. He X\*, **WU C**\*, Yarbrough D, Sim L, Niu G, Merritt J, Shi W & Qi F (2008). The cia operon of *Streptococcus mutans* encodes a unique component required for calcium-mediated autoregulation. ***Mol. Microbiol*.**, 70(1):112-126.

**\*Equal contribution**

1. WU C, Zhang G, Liu X & Dong X (2007). Bicarbonate is a stimulus in the inter-species induced sporulation of strict anaerobic *Syntrophomonas erecta subsp. sporosyntropha*. ***Extremophiles***. 11:827-832
2. WU C, Liu X & Dong X (2007)*. Syntrophomonas wolfei* subsp. *methylbutyratica* subsp. nov., and assignment of *Syntrophomonas wolfei* subsp. *saponavida* to *Syntrophomonas saponavida* sp. nov. comb. nov. ***Sys. Appl. Microbial***. 30: 376-380
3. WU C, Liu X & Dong X (2006). *Syntrophomonas cellicola* sp. Nov., a spore-forming syntrophic bacterium isolated from a distilled-spirit-fermenting cellar, and assignment of *Syntrophospora bryantii* to *Syntrophomonas bryantii* comb. nov**. *IJSEM***. 56: 2331-2335
4. WU C, Liu X & Dong X (2006). *Syntrophomonas erecta* subsp*. sporosyntropha* subsp. nov., a spore-forming bacterium that degrades short chain fatty acids in co-culture with methanogens. ***Sys. Appl. Microbial***. 29:457-462.

**C. Chapter**

1. WU C(2013). Human Microbiome, Actinobacteria in. In: Nelson K. (Ed.) Encyclopedia of Metagenomics: SpringerReference ([www.springerreference.com](http://www.springerreference.com)). Springer-Verlag Berlin Heidelberg. DOI: 10.1007/SpringerReference\_303391 2013-03-18 21:28:09 UTC

**D. Professional communications**

1) **Molecular Basis of Infectious Disease (MBID) Data Club Meeting. August. 17. 2018.** A two-component system associated with quorum sensing in *Fusobacterium nucleatum* controls multispecies interactions during dental biofilm formation.

2). **Molecular Basis of Infectious Disease (MBID) Data Club Meeting. May. 21. 2021.** A novel regulator of SKN-1/Nrf regulates intestinal immunity in Caenorhabditis elegans.

**D. RESEARCH SUPPORT**

07/01/2017-6/30/2019

Type of Grant: NIH R21 DE026574-01A1/NIDCR

Role: PI

Project Title: *Molecular mechanisms of polymicrobial interactions in Fusobacterium nucleatum*

Major goals of this project are to elucidate the regulatory mechanism of Fusobacterium-mediated coaggregation and provide a comprehensive view of fusobacterial factors required for polymicrobial interactions.

07/01/2021-6/30/2026

Type of Grant: NIH R01 DE030895-01/NIDCR

Roel: PI

Project Title: Regulation in Fusobacterium-mediated coaggregation