

## Curriculum Vitae

### 1) Personal information

Name: Yunan Hu, M.S.

Email: yunan@ad.unc.edu

### 2) Education

<u>Degree</u>	<u>Institution</u>	<u>Date conferred</u>	<u>Major</u>
Ph. D.	University of North Carolina at Chapel Hill (UNC-CH), USA	Present	Microbiology and Immunology
M.S.	University of North Carolina at Chapel Hill (UNC-CH), USA	May 2023	Nutrition
B.S.	China Agricultural University (CAU), China	May 2021	Food Science and Engineering

### 3) Bibliography and products of scholarship

#### Peer-reviewed publications

**Career Total = 10      Google Scholar h-index = 6      Google Scholar citations=223**

1. **Hu Y**, Rueppell A, Devpura N, Zasloff R, Arnold J, Roach J, Magness S, Bruno-Bárcena J, Azcarate-Peril MA. Prebiotic  $\beta$  (1-4) Galacto-oligosaccharides Strengthen Intestinal Barrier Integrity via Mucus Production and Modulation of Tight Junction Genes. *Food Bioscience*. 2025;108052. DOI:10.1016/j.fbio.2025.108052
2. Aljumaah MR, Roach J, **Hu Y**, Gunstad J, Azcarate-Peril MA. Microbial dipeptidyl peptidases of the S9B family as host-microbe isozymes. *Sci Adv*. 2025 Apr 4;11(14):eads5721. doi: 10.1126/sciadv.ads5721.
3. **Hu Y**, Aljumaah MR, Azcarate-Peril MA. Galacto-Oligosaccharides and the Elderly Gut: Implications for Immune Restoration and Health. *Advances in Nutrition* 2024;15(8):100263. doi: <https://doi.org/10.1016/j.advnut.2024.100263>.
4. Kang J, Li R, **Hu Y**, Huang X, Chen X-X, Han B-Z. Microbial interactions in mixed-species biofilms on the surfaces of Baijiu brewing environments. *Food Research International* 2024;191:114698. doi: <https://doi.org/10.1016/j.foodres.2024.114698>.
5. Tian S, **Hu Y**, Chen X, Liu C, Xue Y, Han B. Green synthesis of silver nanoparticles using sodium alginate and tannic acid: characterization and anti-S. aureus activity. *International Journal of Biological Macromolecules* 2022;195:515-22. doi: <https://doi.org/10.1016/j.ijbiomac.2021.12.031>.
6. Kang J, **Hu Y**, Jia L, Zhang M, Zhang Z, Huang X, Chen X, Han B-Z. Response of microbial community assembly and succession pattern to abiotic factors during the second

round of light-flavor Baijiu fermentation. *Food Research International* 2022;162:111915. doi: <https://doi.org/10.1016/j.foodres.2022.111915>.

7. Kang J, **Hu Y**, Ding Z, Ye L, Li H, Cheng J, Fan L, Zhao H, Han B, Zheng X. Deciphering the Shifts in Microbial Community Diversity From Material Pretreatment to Saccharification Process of Fuyu-Flavor Baijiu. *Front Microbiol* 2021;12:705967. doi: 10.3389/fmicb.2021.705967.

8. **Hu Y**, Huang X, Yang B, Zhang X, Han Y, Chen X-X, Han B-Z. Contrasting the microbial community and metabolic profile of three types of light-flavor Daqu. *Food Bioscience* 2021;44:101395. doi: <https://doi.org/10.1016/j.fbio.2021.101395>.

9. 胡雨楠, 张钟晓, 陈小雪, 薛岩松, 韩北忠. 发酵时间对清香型白酒二萜基酒风味物质组成及含量的影响. *中国酿造* 2021;40(9):165-72.

10. Chen X, **Hu Y**, Tian S, Han B. Understanding the Interactions between *Staphylococcus aureus* and the Raw-Meat-Processing Environment Isolate *Klebsiella oxytoca* in Dual-Species Biofilms via Discovering an Altered Metabolic Profile. *Microorganisms* 2021;9.

#### Publications in process

1. **Hu, Y.**, Arnold, J., et al. Mechanisms of Galectin 1 Induction by Galactooligosaccharides.

2. Aljumaah MR, Roach J., **Hu Y**, et al. Mapping the Microbial World Within: A Comprehensive Analysis of the Human Gut Microbiome from Organ Donors.

#### Posters and conference proceedings

##### **Career Total = 7**

1. Conference: Gordon Research Conference (GRC): Lactic Acid Bacteria Biology, Symbioses and Applications, 2025, CA: (Oral presentation and poster) **Yunan Hu**, Madison Moore, Jeff Roach, Jeena James, Jason W. Arnold, Rita Tamayo, José M. Bruno-Bárcena, M. Andrea Azcarate-Perill. Pure prebiotics enable the persistence of probiotics and enhance their beneficial effects.

2. Conference: North Carolina Branch of the American Society for Microbiology (NC-ASM) 2024, NC: (Oral presentation) **Yunan Hu**: Galacto-oligosaccharides Enhance Intestinal Barrier Function.

3. Conference: American Society for Nutrition (ASN) 2024, Boston: (Poster) Jeena M James, **Yunan Hu**, Mashael Aljumaah, Esmat Rousta, Nivedita Pareek, Jeff Roach, Jason Arnold, Rita Tamayo, José Bruno-Bárcena, Andrea Azcarate-Peril. The Beneficial Effects of a Combination of Prebiotics and Bacterial Consortium on *Clostridioides difficile* Infection in a Mouse Model. 2024, Current Developments in Nutrition.

4. Conference: American Society for Nutrition (ASN) 2023, Boston: (Poster) **Yunan Hu**, Jason Arnold, Johanna Smeekens, Michael Kulis, Ellyce San Pedro, Scott Magness,

Andrea Azcarate-Peril. Immunomodulatory Effects of Galactooligosaccharides. 2023, Current Developments in Nutrition.

5. *Conference: International Scientific Association for Probiotics and Prebiotics (ISAPP) 2023, Denver:* (Poster) **Yunan Hu**, Jason Arnold, Johanna Smeekens, Michael Kulis, Ellyce San Pedro, Scott Magness, Andrea Azcarate-Peril. Immunomodulatory Effect of Galacto-oligosaccharide on Lgals-1 Gene Expression.

6. *NC Microbiome Consortium Annual Symposium, 2023, NC:* (Poster) **Yunan Hu**, Jason W. Arnold, Rebecca Zasloff, Anika Rueppell, Scott T. Magness, José M. Bruno-Bárcena, M. Andrea Azcarate-Peril. Galacto-oligosaccharides Enhance Intestinal Barrier Function.

7. *NORC Student Research Symposium, 2022, NC:* (Poster) **Yunan Hu**, Jason Arnold, Johanna Smeekens, Michael Kulis, Ellyce San Pedro, Scott Magness, Andrea Azcarate-Peril. Mechanism of Galectin-1 induction by Galactooligosaccharides.

#### 4) Mentoring Activities

##### Undergraduate Student Supervised Research

The table below lists supervised undergraduates who gained research experience from me. The responsibilities of students include performing research on a defined project, demonstrating skills in standard scientific methods, evaluating scientific data, and scientific troubleshooting.

Student	Degree/activities	Dates	Currently at
Angela Molina	Nutrition	Aug 2025-	UNC-Chapel Hill
Jin Ho Kim	Biology	May 2025-	UNC-Chapel Hill
Yoo Rim Lee	Nutrition - Honor Thesis	March 2025-	UNC-Chapel Hill
Weston Matthews	Biology	Aug. 2024- May 2025	UNC-Chapel Hill
Nehal Devpura	Nutrition - Honor Thesis	Feb. 2023-	UNC-Chapel Hill
Rebecca Zasloff	Biology - Honors Thesis	Aug. 2021 – Jun. 2022	Duke and Harvard school of public health

#### 5) Professional Service

2024-Present                      President of UNC Microbiome Trainee club

2025-2027                      Co-chair of Gordon Research Seminar (GRS): Lactic Acid Bacteria Biology, Symbioses and Applications

2025-Present                      Leadership of Nutritional Microbiology ASN's Groups Engaging Members (GEMs)

2023-2024	UNC Biological & Biomedical Science Program (BBSP) Leadership Group
2025.8	Judge of iGEM Mini Jamboree in Healthcare category
2023.9-Present	Laboratory Animal Coordinator at UNC Microbiome Core
2023-Present	Reviewer, Gut Microbiome
2025-Present	Reviewer, Food Bioscience

*Member since:*

- 2022 International scientific association for probiotics and prebiotics Students and Fellows Association (ISAPP-SFA)
- 2024 American Society for Nutrition (ASN)
- 2024 North Carolina Branch of the American Society for Microbiology (NC-ASM)
- 2024 American Society for Microbiology (ASM)