CURRICULUM VITAE: **Xingmin Sun, Ph.D.**

Professor of Molecular Microbiology and Immunology

ADDRESS

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CITIZENSHIP

U.S.A Citizen

NARRATIVE

Dr. Sun is a tenured Professor with early promotion. His research program focuses on microbial pathogenesis, host immune responses, vaccine development, and antibiotic resistance, with particular emphasis on the pathogenesis of *Clostridioides difficile* infection (CDI) and the development of novel therapeutics and vaccines against CDI. He is nationally and internationally recognized for his pioneering contributions to the development of vaccines against CDI and for advancing the understanding of *C. difficile* pathogenesis. His research has been continuously funded by the National Institutes of Health since 2012. Dr. Sun has served on 27 NIH study section panels, including as chair, and has reviewed grant applications for major funding agencies in the United Kingdom, France, Germany, Canada, and Switzerland. He currently serves as Associate Editor for Frontiers in Microbiology and Frontiers in Immunology, and is a member of the editorial boards of the American Society for Microbiology journals: Infection & Immunity and Applied & Environmental Microbiology. He received the Tufts Institute for Innovation Inaugural Award (2014), the Faculty Outstanding Research Achievement Award (2018 and 2025), and the Excellence in Innovation Award (2020) from USF. Dr. Sun also served as Chair of the Research Committee at the USF College of Medicine from 2019 to 2020. Since 2021, he has held multiple leadership roles, including President, Vice President, Secretary, and Executive Committee Member, in the USF Chapter of the National Academy of Inventors. In 2025, he was elected a Senior Member of the National Academy of Inventors.

EDUCATION

Postdoctoral Fellow in Molecular Microbiology and Biochemistry:	Brown University, USA, 2003-2007
Ph.D. in Nature Sciences (**magna cum laude**):	University of Kiel, Germany, 2002
M.S. in Veterinary Microbiology & Immunology:	Nanjing Agricultural University, China, 1994
B.S. in Food Science and Microbiology:	Nanjing Agricultural University, China, 1991

APPOITMENTS

Aug 2026 – Present:	Director of Translational Research, Department of Molecular Medicine, USF
Jun 2024 – Present:	Professor with tenure, Department of Molecular Medicine, Morsani College of Medicine, University of South Florida (USF)
Jun 2019 – May 2024:	Associate Professor with tenure, Department of Molecular Medicine, Morsani College of Medicine, USF
Aug 2015 – May 2019:	Assistant Professor (tenure track), Department of Molecular Medicine, Morsani College of Medicine, USF
Aug 2016 – Present:	Courtesy / affiliated faculty appointments in the Department of Internal Medicine, Department of Molecular Biosciences, Department of Chemistry, Center for Global Health and Inter-Disciplinary Research, and Center for Antimicrobial Resistance, USF
Apr 2012 – Aug 2015:	Research Assistant Professor, Department of Infectious Disease and Global Health, Tufts University, Cummings School of Veterinary Medicine, MA
Aug 2007 – Mar 2012:	Research Associate, Tufts University, Cummings School of Veterinary Medicine
Apr 2003 – Aug 2007**:**	Postdoctoral Fellow**,** Brown University, Department of Molecular Biology, Cell Biology, and Biochemistry, Providence, RI
May 2002 – Mar 2003:	Visiting Scholar, University of Konstanz, Department of Biology, Germany

May 1998 – Apr 2002**:** PhD candidate**,** University of Kiel, Germany
Aug 1994 – Apr 1998: Lecturer in Microbiology**,** Shanghai Ocean University, Shanghai, China

AWARDS and HONORS

- **2025** "Faculty Outstanding Research Achievement Award", USF
- **2025** "Senior Member" of National Academy of Inventors, USA
- **2024** "Florida High Tech Corridor Early-Stage Innovation Fund", USF
- **2020** "Excellence in Innovation Award", USF
- **2018** "Faculty Outstanding Research Achievement Award", USF
- **2014** "Inaugural Award from Tufts Institute for Innovation", Tufts University, USA
- **2012** "NIH/NIDDK K01 Mentored Research Scientist Development Award" (2012-2017)
- **2009** "ESCMID (European Society of Clinical Microbiology and Infectious Diseases) Award" for the "6th ClostPath International Conference", Rome, Italy
- **2008** "Fellows Award for Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) Infectious Diseases", 48th Annual ICAAC/46th IDSA Annual Meeting in Washington, DC
- **2007** "Postdoctoral Travel Award", American Society for Biochemistry and Molecular Biology
- **2002** "Young Scientist Award", Federation of European Microbiological Societies for the 7th Symposium on Lactic Acid Bacteria, Netherland
- **1993** "Outstanding Graduate Student Award", Nanjing Agricultural University, China
- **1992** "Outstanding Graduate Student Award", Nanjing Agricultural University, China

SCHOLARLY ACTIVITY (grant history)

Current:

1. NIH 2R01 AI132711 (**PI: X. Sun;** funded at **6** percentile): 04/01/2024 – 03/31/2029
   Title: Multivalent vaccines against *Clostridioides difficile* infection.
   Total costs for project period: $3,702,781
2. NIH R01 AI185760 (**PI:** Y. Chen / **X. Sun;** funded at **7** percentile): 08/01/2025 – 07/31/2030
   Title: Clostridioides difficile Zinc-binding PBPs as anti-sporulation targets
   Total costs for project period: $3,702,030
3. NIH R21 AI183094 (**PI: X. Sun** / Y. Zhang): 04/01/2024 – 03/31/ 2026
   Title: Development of probiotic-based and Clostridioides difficile-targeted therapeutics.
   Total costs for project period: $356,251
4. USF CREATE (PI: R. Jiang): 06/01/2024 – 05/31/ 2027
   Title: Pushing the frontiers of precision medicine with interdisciplinary high-resolution research.
   My role: **Co-PI**
   Total costs for project period: $500,000
5. RVAC, Inc contract (**PI: X. Sun**): 06/15/2022 – current
   Title: Assessment of efficacies of mRNAS in mouse and hamster models of Clostridioides difficile infection
   Total costs for project period: $436,906
6. USF CREATE (PI: L. Shaw / K. Kim / J. Adams): 06/01/2024 – 05/31/ 2027
   Title: USF Center for Antimicrobial Resistance.
   My role: **Co-Investigator**
   Total costs for project period: $500,000
7. NIH S10OD030346 (PI: G. Thinakaran**)**: 02/01/2021 – current
   Title: High-plex protein and gene expression digital spatial profiler for core facility
   My role: **Co-Investigator**
   Total costs for project period: $450,500
8. Contract with Pan Theryx, Inc (**PI: X. Sun**): 06/01/2019 – current
   Title: mRNA therapeutics against Clostridioides difficile infection
   Total costs for project period: $42,000

9. Anthony Gagliardi Foundation (**PI: X. Sun)**: 08/30/2018 – current
   Title: Support for research on *C. difficile*
   Total costs for project period till 2023: $47,500

10. Outstanding Research Achievement Awards by USF **(PI: X. Sun):** 05/01/2025
    Total costs: $7000.

11. USF Microbiome Award (**PI: X. Sun**) 12/01/2025 – 12/01/2026
    Title: Development of novel therapeutics against *C. difficile* infection with a focus on maintaining and enhancing beneficial microbiota
    Total costs: $20,000

Pending:

1. NIH R01 AI200927 (**PI:** J. Cai / **X. Sun**): 04/01/2027 – 03/31/2032
   Title: Novel biodegradable polymer biomaterials combating *Clostridioides difficile* infection.
   Total costs for project period: $3,450,000

2. NIH R01 AI203323 (**PI: X. Sun**): 04/01/2027 – 06/30/2032
   Title: Mucosal Vaccines against *Clostridioides difficile* Infection
   Total costs: $3,696,662

Completed:

1. NIH R01AI149852 (PI: J. Cai / **X. Sun**; funded at **4** percentile): 09/23/2019 – 08/31/2025
   Title: Novel polymer biomaterials combating C. difficile infection
   Total costs for project period: $1,868,250

2. NIH R01 AI132711 (**PI: X. Sun;** funded at **7** percentile): 06/20/2017 – 05/31/2023
   Title: Multivalent vaccines against *Clostridium difficile* infection
   Total costs for project period: $1,923,721

3. NIH R21 AI159745 (**PI:** J. Lin / **X. Sun**): 09/24/2021 – 08/31/2024
   Title: Bile acid salt inhibitors and Clostridioides difficile infection
   Total costs for project period: $485,866

4. USF Microbiome Research Award (**PI:** R. Jiang / **X. Sun**): 06/30/2023 – 6/30/2024
   Title: Unleashing the power of the gut: a new approach to combat Clostridioides difficile infection
   Total costs for project period: $40,000

5. Florida High Tech Corridor Early-Stage Innovation Fund (**PI: X. Sun**) 03/01/2024 –08/31/2024
   Title: Development of Probiotic-Based Vaccines Delivery System Against Clostridioides Difficile Infection
   Total costs for project period: $25,000

6. NIH R03 DK112004 (**PI: X. Sun)**: 04/14/2017 – 03/31/2019
   Title: The role of tumor progression locus 2 (TPL2) in the pathogenesis of *C. difficile* infection
   Total costs for project period: $155,598

7. USF Internal grant (PI: R. Jiang): 03/01/2019 – 03/01/2020
   Title: Decoding gut microbiome-host interactions at single-cell resolution during *C. difficile* infection
   My role: **Co-Investigator**
   Total costs for project period: $100,000

8. NIH K01DK092352 (**PI: X. Sun,** funded in exceptional-outstanding **rank**): 04/01/2012 – 03/31/2018
   Title: Signaling pathway of TNF-α production and *C. difficile* infection
   Total costs for project period: $469,625

9. NIH R21 AI113470 (**PI: X. Sun**): 05/01/2015 – 04/30/2018
   Title: Multivalent bacillus mucosal vaccines against *C. difficile* infection
   Total costs for project period: $453,750

10. USF Interdisciplinary Seed Grant Award (**PI: X. Sun** & B. Baker**)**: 02/15/2017– 02/15/2018
    Title: Bioprospecting antibiotics in the fungal metabolome to combat *C. difficile* infection
    Total costs for project period: $50,000

11. Sub-contract with HEPCO LLC Medical (**PI:** My Lien Dao/**X. Sun)**: 07/01/2017 – 08/31/2018
    Title: Antimicrobial activity of GEMS sole mate
    Total costs for project period: $10,000

12. Tufts Institute for Innovation Award (**PI: X. Sun**): 10/01/2014 – 08/31/2015
    Title: Novel multivalent mucosal/oral vaccines against *C. difficile* infection
    Total costs for project period: $250,000

13. Tufts Technology Access Award (**PI: X. Sun)**: 09/30/2013 – 08/31/2014
    Title**:** Imaging of the dynamic distribution of *C. difficile* toxins and dendritic cells in live mice using *in vivo* imaging system
    Total costs for project period: $2000

14. Tufts Collaborates Award (**PI: X. Sun**): 07/01/2013 – 06/30/2015
    Title: A novel chimeric vaccine against *C. difficile* infection
    Total costs for project period: $50,000

15. Contract with Jaguar Animal Health (**PI: X. Sun)**: 04/01/2014 – 06/30/2015
    Title: Evaluation of SP303 for treatment of *C. difficile* infection in hamsters
    Total costs for project period: $65,210

16. Tufts Collaborates (**PI: X. Sun**): 07/01/2014 – 07/31/2015
    Title: The role of colonic progenitor cells in the pathogenesis of *C. difficile* infection
    Total costs for project period: $34,139

PUBLISHED BIBLIOGRAPH

Peer Reviewed Journal Articles:

1. Duolong Zhu, Shaohui Wang, **X Sun**, Robert A Britton. CRISPR-AsCas12a and dAsCas12a-Mediated Gene Knockout and Knockdown in Clostridioides difficile. Methods Mol Biol. 2026:3046:47-55. PMID: 42096148.
2. Chakraborty S, Heuler J, Wang S, Qin J, Roy A, Agbendeh LN, Tomatsidou A, Kim HB, **Sun X***. Bioinformatic and experimental identification and characterization of Clostridioides difficile lipoproteins as potential vaccine candidates. Front Immunol. 2025 Dec 17;16:1650364. PMID: 41479895.
3. Keum GB, Doo H, Jinok, Kwak J, **Sun X**, Cho J, Kim HB. Effects of phytobiotics on intestinal barrier function and gut microbiome in weaned piglets challenged with enterotoxigenic Escherichia coli. J Anim Sci Technol. 2026 Jan;68(1):181-196. PMID:41695675
4. Azimirad M., Noori M., Mazhari S., S. K. A. Raftar, Ghorbaninejad M., Meyfour A., Mortazavi P., Zali M. R., Bella S. D., **Sun X.**, Baghaei K., Yadegar A. Membrane vesicles derived from toxigenic Clostridioides difficile induce epithelial-mesenchymal transition in colonic epithelial cells: insights from in vitro and in vivo studies. Microb Pathog. 2025 Aug 14;208:107988. PMID: 40816603.
5. Choi Y, Keum GB, Kang J, Doo H, Kwak J, Kim H, Chae Y, Kim S, Yang H, Lee S, **Sun X**, Kim HB, Yoo J. Evaluation of kefir consumption on gut microbial diversity in a healthy young population using full-length 16S rRNA gene sequencing. Front Microbiol. 2025 May 21;16:1587831. PMID: 40469719.
6. Kang J, Choi Y, Keum GB, Doo H, Kwak J, Kim H, Chae Y, Lee S, Yang H, Kim S, **Sun X**, Kim HB, Yoo SJ. Effect of diet and lifestyle changes on gut microbial diversity in healthy adolescents. J Microbiol Biotechnol. 2025 Jun 12;35:e2503018. PMID: 40537892.
7. Zhu D, Wozniak KJ, Midani F, Wang S, **Sun X**, Britton RA. Control of Clostridioides difficile virulence and physiology by the flagellin homeostasis checkpoint FliC-FliW-CsrA in the absence of motility. **mBio.** 2025;16(3):e0380124. PMID: 39882902.
8. Zhang F, Wang S, Yang J, Fraser K, Gibson JM, Wang C, Dordick JS, Tomatsidou A, Linhardt RJ, Wang L, **Sun X*.** Characterization of heparin interactions with Clostridioides difficile toxins and its potential as anti-CDI therapeutics. Carbohydr Polym. 2025;351:123143. PMID: 39779041.
9. Huang B, Gregory-Lottb E, Li B. X, Tran T. H, Li S, Xue M, Wang S, Asokan A, Shen N, **Sun X**, Cao C, Xiao X, Daughdrillb G, Cai J. Discovery of peptidomimetic inhibitors of CREB/CBP by targeting hydrophobic grooves on the surface of the CBP KIX domain. Acta Pharm Sin B. 2025 Dec;15(12):6529-6545. PMID: 41477325.
10. Wang S, Heuler J, Bullock J, Qin J, Chakraborty S, Nathaniel AL, Wang S, **Sun X***. Cell Wall Protein 2 as a Vaccine Candidate Protects Mice Against Clostridioides difficile Infection. Vaccines (Basel). 2024 Dec 30;13(1):21. PMID: 39852800.

11. Wang, Y.; Hu, X.; Pandey, S.; Khatri, U.; Shen, T.; Subbiah, V.; Mooers, B. H. M.; Chao, T.; Wang, S.; Yu, H.; **Sun, X**.; Wu, J.; Cai, J., Targeting Oncogenic RET Kinase by Simultaneously Inhibiting Kinase Activity and Degrading the Protein. J Med Chem. 2025 Jan 9;68(1):81-94. PMID: 39723919.
12. Li, C.; Heuler, J.; Zhu, D.; Meng, X.; Chakraborty, S.; Harmanus, C.; Wang, S.; Peng, Z.; Smits, W. K.; Wu, A.; **Sun, X***., Genomic and phenotypic characterization of a Clostridioides difficile strain of the epidemic ST37 type from China. Front Cell Infect Microbiol. 2024 Oct 18:14:1412408. PMID:39492989.
13. Xue M, Chakraborty S, Gao R, Wang S, Gu M, Shen N, Wei L, Cao C, **Sun X***, Cai J*. Antimicrobial Guanidinylate Polycarbonates Show Oral In Vivo Efficacy Against Clostridioides Difficile. Adv Healthc Mater. 2024:e2303295. PMID: 38321619. **Co-corresponding author**.
14. Wickramage I, Peng Z, Chakraborty S, Harmanus C, Kuijper EJ, Alrabaa S, Smits WK, **Sun X*.** The vanR(Cd) Mutation 343A>G, Resulting in a Thr115Ala Substitution, Is Associated with an Elevated Minimum Inhibitory Concentration (MIC) of Vancomycin in Clostridioides difficile Clinical Isolates from Florida. Microbiol Spectr. 2023:e0377722. PMID: 37125917.
15. Wang S, Ju X, Heuler J, Zhang K, Duan Z, Warnakulasuriya Patabendige HML, Zhao S, **Sun X***. Recombinant Fusion Protein Vaccine Containing Clostridioides difficile FliC and FliD Protects Mice against C. difficile Infection. Infect Immun. 2023:e0016922. PMID: 36939332.
16. Chandra H, Sorg JA, Hassett DJ, **Sun X***. Regulatory transcription factors of Clostridioides difficile pathogenesis with a focus on toxin regulation. Crit Rev Microbiol. 2023;49(3):334-49. PMID: 35389761.
17. Joshua Heuler, Harish Chandra, **Sun X***. Mucosal Vaccination Strategies against Clostridioides difficile Infection. Vaccines (Basel). 2023 Apr 23;11(5):887. PMID: 37242991.
18. Chandra H, Kovall RA, Yadav JS, **Sun X***. Host Immune Responses to Surface S-Layer Proteins (SLPs) of Clostridioides difficile. Microorganisms. 2023;11(2). PMID: 36838345.
19. Wang Y, Xue M, Gao R, Chakraborty S, Wang S, Zhao X, Gu M, Cao C, **Sun X**, Cai J. Short, Lipidated Dendrimeric gamma-AApeptides as New Antimicrobial Peptidomimetics. Int J Mol Sci. 2023;24(7). PMID: 37047380.
20. Xue S, Xu W, Wang L, Wang X, Duan Q, Calcul L, Wang S, Liu W, **Sun X**, Lu L, Jiang S, Cai J. An HR2- Mimicking Sulfonyl-gamma-AApeptide Is a Potent Pan-coronavirus Fusion Inhibitor with Strong Blood-Brain Barrier Permeability, Long Half-Life, and Promising Oral Bioavailability. ACS Cent Sci. 2023;9(5):1046-58. PMID: 37252367.
21. Wickramage I, Heuler J, Peng Z, Alrabaa S, **Sun X***. Draft Genome Sequences and Genome Characterization of Three Toxigenic and Two Nontoxigenic Clostridioides difficile Clinical Isolates from Florida, USA. Microbiol Resour Announc. 2023:e0015123. PMID: 37067425.
22. Sun D*, **Sun X***, Hu Y*, Yamaichi Y*. Editorial: Horizontal gene transfer mediated bacterial antibiotic resistance, volume II. Front Microbiol. 2023;14:1221606. PMID: 37425999.
23. Jiang W, Abdulkadir S, Zhao X, Sang P, Tomatsidou A, Zhang X, Chen Y, Calcul L, **Sun X**, Cheng F, Hu Y, Cai J. Inhibition of Hypoxia-Inducible Transcription Factor (HIF-1alpha) Signaling with Sulfonyl-gamma-AApeptide Helices. J Am Chem Soc. 2023;145(36):20009-20. PMID: 37665648.
24. Sacco MD, Wang S, Adapa SR, Zhang X, Lewandowski EM, Gongora MV, Keramisanou D, Atlas ZD, Townsend JA, Gatdula JR, Morgan RT, Hammond LR, Marty MT, Wang J, Eswara PJ, Gelis I, Jiang RHY, **Sun X***, Chen Y*. A unique class of Zn(2+)-binding serine-based PBPs underlies cephalosporin resistance and sporogenesis in Clostridioides difficile. **Nat Commun**. 2022;13(1):4370. PMID: 35902581. ***Co-corresponding author**.
25. Wang S, Zhu D, **Sun X***. Development of an Effective Nontoxigenic Clostridioides difficile-Based Oral Vaccine against C. difficile Infection. Microbiol Spectr. 2022:e0026322. PMID: 35583336.
26. Wang S, Heuler J, Wickramage I, **Sun X***. Genomic and Phenotypic Characterization of the Nontoxigenic Clostridioides difficile Strain CCUG37785 and Demonstration of Its Therapeutic Potential for the Prevention of C. difficile Infection. Microbiol Spectr. 2022:e0178821. PMID: 35315695.
27. El Hadidy N, Uversky VN*, **Sun X***. On the Potential Significance of the Intrinsically Disordered Regions in the Clostridiodes difficile Toxins A and B. Curr Protein Pept Sci. 2022;23(3):192-209. PMID: 35585826.
28. Xue S, Wang X, Wang L, Xu W, Xia S, Sun L, Wang S, Shen N, Yang Z, Huang B, Li S, Cao C, Calcul L, **Sun X**, Lu L, Cai J, Jiang S. A novel cyclic gamma-AApeptide-based long-acting pan-coronavirus fusion inhibitor with potential oral bioavailability by targeting two sites in spike protein. Cell Discov. 2022;8(1):88. PMID: 36075899.
29. Singh Y, Beamer G, **Sun X**, Shukla P. Recent developments in systems biology and genetic engineering toward design of vaccines for TB. Crit Rev Biotechnol. 2022;42(4):532-47. PMID: 34641752.
30. Limon AD, Patabendige H, Azhari A, **Sun X**, Kyle DE, Wilson NG, Baker BJ. Chemistry and Bioactivity of the Deep-Water Antarctic Octocoral Alcyonium sp. Mar Drugs. 2022;20(9). PMID: 36135765.
31. Zhu D, Wang S, **Sun X***. FliW and CsrA Govern Flagellin (FliC) Synthesis and Play Pleiotropic Roles in

Virulence and Physiology of Clostridioides difficile R20291. Front Microbiol. 2021;12:735616. PMID: 34675903.
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33. Heuler J, Fortier LC, **Sun X***. Clostridioides difficile phage biology and application. FEMS Microbiol Rev. 2021;45(5). PMID: 33580957.
34. Chandra H, Sharma KK, Tuovinen OH, **Sun X***, Shukla P*. Pathobionts: mechanisms of survival, expansion, and interaction with host with a focus on Clostridioides difficile. Gut Microbes. 2021;13(1):1979882. PMID: 34724858. **Co-corresponding author.**
35. Wickramage I, Spigaglia P, **Sun X***. Mechanisms of antibiotic resistance of Clostridioides difficile. J Antimicrob Chemother. 2021;76(12):3077-90. PMID: 34297842.
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37. Zhu D, Bullock J, He Y, **Sun X***. Cwp22, a novel peptidoglycan cross-linking enzyme, plays pleiotropic roles in Clostridioides difficile. Environ Microbiol. 2019;21(8):3076-90. PMID: 31173438.
38. Daou N, Wang Y, Levdikov VM, Nandakumar M, Livny J, Bouillaut L, Blagova E, Zhang K, Belitsky BR, Rhee K, Wilkinson AJ, **Sun X**, Sonenshein AL. Impact of CodY protein on metabolism, sporulation and virulence in Clostridioides difficile ribotype 027. PLoS One. 2019;14(1):e0206896. PMID: 30699117.
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2. Shaohua Wang; Santosh Kumar Prajapati; Sidharth P Mishra; Shalini Jain; Bo Wang; Athanasios Tsalatsanis; Ambuj Kumar; **X. Sun**; Hariom Yadav (2026). Metformin protects against Clostridioides difficile infection by modulating both host and microbes. (Submitted to Cell Reports)
3. Shaohui Wang, Yukihiro Nakanishi, **X. Sun** (2026). Receptor binding domain 2 of *Clostridioides difficile* binary toxin as a vaccine component against *C. difficile* infection

Meeting Abstracts:

1. Chakraborty S, Heuler J, Wang S, Qin J, Roy A, Agbendeh LN, Tomatsidou A, Kim HB, **Sun X***. Bioinformatic and experimental identification and characterization of Clostridioides difficile lipoproteins as potential vaccine candidates. Department of Molecular Medicine Retreat. April 17, 2025. **Oral presentation.**
2. Wang S, Y. Nakanishi, **X. Sun** (2026). Receptor binding domain 2 of *Clostridioides difficile* binary toxin as a vaccine component against *C. difficile* infection. Department of Molecular Medicine Retreat. April 17, 2025.
3. Chakraborty S, Heuler J, Wang S, Qin J, Roy A, Agbendeh LN, Tomatsidou A, Kim HB, **Sun X***. Bioinformatic and experimental identification and characterization of Clostridioides difficile lipoproteins as potential vaccine candidates. Florida Branch of the American Society of Microbiology Annual Meeting. Florida Gulf Coast University, USA. March 28-30, 2026. **Oral presentation.**
4. Wang S, Y. Nakanishi, **X. Sun** (2026). Receptor binding domain 2 of *Clostridioides difficile* binary toxin as a vaccine component against *C. difficile* infection. Florida Branch of the American Society of Microbiology Annual Meeting. Florida Gulf Coast University, USA. March 28-30, 2026.
5. Qin J., Heuler J, **Sun X*.** Cwp2 protein protects mice against Clostridioides difficile infection. Florida Branch of the American Society of Microbiology Annual Meeting. Florida Gulf Coast University, USA. March 28-30, 2026.
6. Chakraborty S, Heuler J, Wang S, Qin J, Roy A, Agbendeh LN, Tomatsidou A, Kim HB, **Sun X***. Bioinformatic and experimental identification and characterization of Clostridioides difficile lipoproteins as potential vaccine candidates. USF Health Research Day. March 6, 2026.
7. Wang S, Y. Nakanishi, **X. Sun** (2026). Receptor binding domain 2 of *Clostridioides difficile* binary toxin as a vaccine component against *C. difficile* infection. USF Health Research Day. March 6, 2026.
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Bioinformatic and experimental identification and characterization of Clostridioides difficile lipoproteins as potential vaccine candidates. ASM annual meeting 2026. Washington DC. June 4-7, 2026

9. Wang S, Y. Nakanishi, **X. Sun** (2026). Receptor binding domain 2 of *Clostridioides difficile* binary toxin as a vaccine component against *C. difficile* infection. ASM annual meeting 2026. Washington DC. June 4-7, 2026
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11. Wang S, Y. Nakanishi, **X. Sun** (2026). Receptor binding domain 2 of *Clostridioides difficile* binary toxin as a vaccine component against *C. difficile* infection. Tampa Area Bacteriology Symposium (TABS), USF. May 10, 2026. Oral presentation.
12. Agbendeh L, **X. Sun.** Development of Chimeric Multi-Epitope Spore Coat Protein Vaccine Candidates Against Clostridioides difficile Infection. 52nd Annual NOBCChE Conference at the Hilton Atlanta, GA, September 22-25, 2025. **Oral presentation**
13. Agbendeh L, **X. Sun.** Chimeric spore exosporium protein comprising CdeC and CdeM as a promising vaccine candidate against Clostridioides difficile infection. ABRCMS 2025 in San Antonio, TX, November 19-22, 2025. **Oral presentation**
14. Agbendeh L, Chakraborty S, Tomatsidou A, Roy A, Wang S, Madser J, Chen Y. & **Sun X***. Development of Chimeric multi-epitope spore coat protein vaccine candidates against C. difficile infection. USF Health Research Day. Feb 28, 2025.
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16. Agbendeh L, Chakraborty S, Tomatsidou A, Roy A, Wang S, Madser J, Chen Y. & **Sun X***. Development of Chimeric multi-epitope spore coat protein vaccine candidates against C. difficile infection. The 2025 Statewide Graduate Research Symposium. Florida Atlantic University, April 7-8, 2025.
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18. Agbendeh L, Chakraborty S, Tomatsidou A, Roy A, Wang S, Madser J, Chen Y. & **Sun X*.** Vaccine development against C. difficile infection using reverse vaccinology. National Organization for the Professional Advancement of Black Chemist and Chemical Engineers (NOBCChE) Conference, Baltimore, USA. April 4-6, 2025. **Oral Presentation and receipt of "Outstanding Presentation Award"**
19. Wang S, Heuler J, & **Sun X*.** The Receptor binding domain 2 (RBD2) of binary toxin (CDI) as a promising vaccine candidate protects both mice and hamsters against CDT challenge. 14th International Conference on the Molecular Biology and Pathogenesis of Clostridia. Sept 1-4, 2025. Paris, France.
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21. Roy A, Chakraborty S, **Sun X***. A novel multi-epitope vaccine against C. difficile infection. USF Health Research Day. Feb 28, 2025.
22. Gosnell V, Talpady R, Agbendeh L, Chakraborty S, **Sun X*.** A multivalent vaccine against the toxins of C. difficile. USF Graduate symposium. March 26, 2025. **Oral Presentation**
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45. Chakraborty S, Zhu D. & **Sun X***. Functional characterization of an OmpR family two-component system from Clostridioides difficile R20291. USF Research Day, March 3, 2023
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48. Zhu D, Wang S, & **Sun X***. FliW and CsrA govern flagellin (FliC) synthesis and play pleiotropic roles in virulence and physiology of *Clostridioides difficile* R20291". Anaerobe 2022, July 28 - 31, 2022. Seattle, USA.
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58. Wickramage I, Peng Z, Harmanus C, Wang S, Alrabaa S, Smits W K, & **Sun X.***. "Genomic and phenotypic characterization and comparative genome analysis of three novel Clostridium difficile strains with respect to virulence and antibiotic resistance". American Society of Microbiology Annual Meeting 2019, June 20-24, San Francisco, USA.
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82. Wang Y, Ju X, Tzipori S, Feng H, Greenberg A & **Sun X*.** "TPL-2 is a key regulator of inflammation in *C. difficile* infection". American Society of Microbiology Annual Meeting 2016, June 16-20, 2016, Boston, USA.
83. Wang Y, Bouillaut L, Ju X, Wang Y, Sonenshein A. L. & **Sun X***. "Non-toxic *C. difficile* strains expressing chimeric fragments of TcdA and TcdB protect protective immunity against *C. difficile* infection in both mice and hamsters". Anaerobe 2016, July 11-14, 2016, Nashville, USA.
84. Wang Y, Ju X, Tzipori S, Feng H, Greenberg A, & **Sun X***. "Regulation of intestinal inflammation in *Clostridium difficile* infection by TPL2". Anaerobe 2016, July 11-14, 2016, Nashville, USA.
85. Wang Y, Yan Y, Kim H, Schmidt D, Tzipori S, & **Sun X***. "A chimeric protein (mTcd138) comprising the glucosyltransferase and domains of toxin B and the receptor binding domain of toxin A provides full protection against *Clostridium difficile* infection in mice". 2nd International Congress on Bacteriology and Infectious Diseases. Nov 17-19, 2014, Chicago, USA.
86. **Sun X**, Wang Y, Nie W, Kim H. B, Schmidt D, Tzipori S. "A novel chimeric vaccine against *Clostridium difficile* infection". Tufts Research Day, Tufts University, Sept 20, 2013, Boston, USA.
87. **Sun X,** Wang H, Davis B, & Feng H. "A mouse relapse model of *C. difficile* infection and its application in evaluating immunotherapies against disease". 7th International Conference on the Molecular Biology and Pathogenesis of the Clostridia-Clospath 2011 (October 2011, Ames, IA, USA).
88. Wang, H, **Sun X,** Zhang Y, Tzipori S & Feng H. "Novel Vaccines". 7th International Conference on the Molecular Biology and Pathogenesis of the Clostridia-Clospath 2011 (October 2011, Ames, IA, USA).
89. Steele J, Chen K, **Sun X**, Zhang Y, Wang H, Tzipori S & Feng H. "Systemic dissemination of *C. difficile* toxins A and B is associated with severe fatal disease in the piglet and mouse models". 7th International Conference on the Molecular Biology and Pathogenesis of the Clostridia-Clospath 2011 (October 2011, Ames, IA, USA).
90. Li S, Shi L, **Sun X,** Feng H. "A neutralizing intrabody to study autocleavage of *Clostridium difficile* toxin B". 7th International Conference on the Molecular Biology and Pathogenesis of the Clostridia-Clospath 2011. (October 2011, Ames, IA, USA).
91. **Sun X,** Wang H, Davis B & Feng H. "A mouse relapse model of *Clostrridium difficile* infection". Digestive Disease Week 2011. (May 2011, Chicago, IL, USA).
92. Wang H, **Sun X**, Zhang Y, Tzipori S & Feng H. "Development of vaccines against *Clostridium difficile* infection". Digestive Disease Week 2011. (May 2011, Chicago, IL, USA).
93. Steele J., Chen K, **Sun X**, Zhang Y, Wang H, Tzipori S & Feng H. "Toxemia is the cause of systemic

disease in the piglet and mouse models of *Clostridium difficile* infection". Digestive Disease Week 2011. (May 2011, Chicago, IL, USA).

94. Wang H, **Sun X**, Zhang Y, Tzipori S, & Feng H. "Development of vaccines against *Clostridium difficile* infection". 110th ASM Annual Meeting. (May 2010, San Diego, CA, USA).
95. Wang H., **Sun** X, Zhang Y, Shi L, Tzipori S, & Feng H. "The Glucosyltransferase determines the major biological activities of *Clostridium difficile* toxins". 110th ASM Annual Meeting. (May 2010, San Diego, CA, USA).
96. Wang H, **Sun X**, Zhang Y, Tzipori S, & Feng H. "Evaluation of a glucosyltransferase-deficient holotoxin B of *Clostridium difficile* as a novel vaccine candidate". Second Greater Boston Symposium on Vaccine Science. (April 2010, Cambridge, MA, USA).
97. Zhang Y, Shi L, **Sun X**, Wang H, Tzipori S, Wang X, & Feng H. "A fragment of 97-amino-acids (D97) within the transmembrane domain is essential for the cellular activity of *Clostridium difficile* toxin B". 110th ASM Annual Meeting. (May 2010, San Diego, CA, USA).
98. **Sun X**, Tzipori S & Feng H. "Involvement of MAP kinases in *Clostridium difficile* toxin A-mediated TNF-alpha production by macrophages". 6th ClostPath International Conference: Clostridia: The impact of Genomics on Disease Control. (October 2009, Italy).
99. **Sun X,** Tzipori S & Feng H. "Combined activation of the ERK and p38 pathways by *Clostridium difficile* toxin A mediates TNF-α production by macrophages". (September 2009, San Francisco, USA).
100. He X, **Sun X**, Wang J, Zhang Q, Tzipori S & Feng H. "Antibody-mediated enhanced cytotoxcitiy of *Clostridium difficile* toxin: Application in Diagnosis". 6th ClostPath International Conference: Clostridia: The impact of Genomics on Disease Control. (October 2009, Italy).
101. Wang J, Chen M, Huang T, **Sun X**, Li S, Tzipori S, Wang X & Feng H. "Anti-tumor activity of *Clostridium difficile* toxin B". 6th ClostPath International Conference: Clostridia: The impact of Genomics on Disease Control. (October 2009, Italy).
102. **Sun X**, Tzipori S & Feng H. "Combined activation of the ERK and p38 pathways by *Clostridium difficile* toxin A mediates TNF-α production by macrophages". Food & Waterborne Diseases Integrated Research Network Meeting. (April 2009, Washington, DC. USA).
103. **Sun X**, He X, Tzipori S, Gerhard R & Feng H. "Mechanisms of the *Clostridium difficile* toxins-induced secretion of TNF-α by macrophages". Food & Waterborne Diseases Integrated Research Network Meeting. (April 2008, Atalanta, USA).
104. **Sun X**, He X, Tzipori S, Gerhard R & Feng H. "Mechanisms of the *Clostridium difficile* toxins-induced secretion of TNF-α by macrophages". 48th Annual Interscience Conference on Antimicrobial and Chemotherapy and the Infectious Disease Society of America 46th Annual Meeting. (October 2008, Washington, DC. USA).
105. **Sun X,** Mierke D. F, Biswas T, Lee S. Y, Landy A, & Radman-Livaja M. "Architecture of the 99 bp DNA – Six Protein Regulatory Complex of the λ *att* Site". Oxford Workshop on Site-specific recombination, transposition and DNA dynamics. (September 2006, Oxford, UK).
106. **Sun X,** Mierke D. F, Biswas T, Lee S. Y, Landy A, & Radman-Livaja M. **"**Accessory DNA-bending proteins confer a complex contour on the 99 bp regulatory DNA of bacteriophage lambda *att* site as determined

by triangulation of FRET distances". Nucleic Acids Conference. (June 2006, Salve Regina University, U.S.A.).

107. Neve H, **Sun X**, Heller K. J. "Phage TP-J34 gene products involved in altering the cell surface of lysogenic *Streptococcus thermophilus* strain J34". Workshop "Bacterial Cell Surfaces"**.** (March 2004, University of Tübingen, Germany).
108. **Sun X**, Neve H & Heller K.J. "Characterization of a lipoprotein encoded by the temperate *Streptococcus thermophilus* phage TP-J34 and its impact on phage resistance and lysogeny". XIIth International Congress of Virology. (July 27-Aug. 1, 2002, Paris, France).
109. **Sun X,** Heller K. J, & Neve H. "Characterization of a lipoprotein encoded by the temperate *Streptococcus thermophilus* phage TP-J34 and its impact on phage resistance and lysogeny". Seventh Symposium on Lactic Acid Bacteria**.** (September 2002, the Netherlands).
110. Neve H, **Sun X,** & Heller K J. "Impact of a lipoprotein encoded by the temperate *Streptococcus thermophilus* phage TP-J34 on phage resistance and lysogeny". Seventh Symposium on Lactic Acid Bacteria. (September 2002, the Netherlands).
111. Neve H, Sun X, & Keller K J. "Molecular and functional characterization of a temperate Streptococcus thermophilus phage TP-J34 gene (ltp) encoding a membrane-bound lipoprotein". XIIth International Congress of Virolog. (July 27-Aug. 1, 2002, Paris, France).
112. Neve H, Sun X, & Heller K J. "Analysis of the temperate Streptococcus thermophilus bacteriophage

TP- J34 coding for a unique lipoprotein and its phage/host relationship". Microbiology 2000. (March 2000, Munich, Germany).

113. Neve H, **Sun X** & Heller K J. "Analysis of the lysogeny module and the flanking regions of the temperate S*treptococcus thermophilus* bacteriophage TP-J34". FEMS 6# Symposium on lactic acid bacteria - genetics, metabolism and application. (1999, Netherlands).
114. **Sun X,** Neve H & Heller K J. **"**The lipoprotein determinant of the temperate *Streptococcus thermophilus* phage TP-J34: Expression in *E. coli* and subcloning in *S. thermophilus".* EU BIOTECH STARLAB Phage Meeting. (June 1999, Kiel, Germany).
115. **Sun X,** Neve H, Geis A, & Heller K J. "Cloning and overexpression of the lipoprotein gene of *Streptococcus thermophilus* phage TP-J34 in *E. coli".* Annual report of 1998. Federal Research Centre for Nutrition and Food, Kiel, Germany.

OTHER RESEARCH AND CREATIVE ACHIEVEMENTS (Patent Application)

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1. "Engineered Lysin-human defensin protein". Inventor: **Xingmin Sun**. Patent ID:US 12,630,596 B2. Patent approval date: May 19, 2026.
2. "Immunogenic proteins against *Clostridium difficile* infection". Inventor: **Xingmin Sun**. Patent ID:US 10,555,992 B2. Patent approval date: February 11, 2020.
3. "Non-toxigenic *Clostridium difficile* spores for use in oral vaccination". Inventors: **Xingmin Sun,** Abraham L. Sonenshein. Patent ID: US 10,668,140 B2. Patent approval date: June 2, 2020.
4. "Recombinant fusion protein vaccine containing Clostridioides difficile FliC and FliD. Inventor: **Xingmin Sun.** Patent ID: US12,667,609B2. Patent approval date: June 30, 2026
5. "Small Molecular inhibitors targeting *Clostridioides difficile* sporulation". Inventors: Yu Chen, Michael Sacco, James Leahy, Elena Bray, **Xingmin Sun**, Xiujun Zhang. US Patent ID: US 12,098,153 B2. Patent approval date: Sept 24, 2024
6. "Compositions and methods of use of novel inhibitors of infectious organisms isolated from an Antarctic deep-sea coral". Inventors: Bill Baker, Nerida G. Wilson, **Xingmin Sun**, Anne-Claire D. Limon. US Provisional patent application No. 63493278. Date of filing: October 14, 2022.
7. "Vaccine containing RBD2 of CDTb component from binary toxin of *Clostridioides difficile*". Inventors: **Xingmin Sun**, Shaohui Wang. Provisional patent application No. 63/516416. Date of filing: 07/25/2024.
8. "Cwp2 protein as an effective vaccine against Clostridioides difficile infection". Inventors: **Xingmin Sun,** Shaohui Wang. US Provisional patent application No. 63/679,343. Date of filling: Aug 5, 2024.
9. "Fusion immunogens (CdeCM) targeting Clostridioides difficile recurrence". Inventors: **Xingmin Sun,** Lubem Nathaniel Agbendeh, Soumyadeep Chakraborty. Invention Disclosure ID: 24T268. Date of disclosure: June 25, 2024
10. "A novel multi-epitope vaccine against Clostridioides difficile surface proteins". Inventors: **Xingmin Sun**, Adrit Roy, Soumyadeep Chakraborty. Provisional patent application No. 63/560,086. Date of filing: March 1, 2024.
11. "Novel therapeutics for parasitic infection" Inventors: Bill J. Baker, Joe Bracegirdle, James R. Rocca, John H. Adams, Nerida G. Wilson, Debora Casandra, **Xingmin Sun**, Anne-Claire D. Limon. Patent application No. 19/121,056. Date of filing: April 14, 2025.
12. "Fusion immunogens (CdeCM) targeting Clostridioides difficile recurrence". Inventors: **Xingmin Sun,** Lubem Nathaniel Agbendeh, Soumyadeep Chakraborty. US Provisional Patent Application No. 63/777,056. Date of filing: 03/25/2025.
13. "A Multivalent Vaccine Against the Toxins of Clostridioides difficile". Inventors: **Xingmin Sun**, Veronica Gosnell, Soumyadeep Chakraborty. US Provisional patent application. Date of filing: 05/30/2025
14. "Cell Wall Protein 6 (Cwp6) as a vaccine component against *Clostridioides difficile* infection". Inventors: **Xingmin Sun**, Lubem Nathaniel Agbendeh. US Provisional Patent Application No. 63/845,836. Date of filing: 07/17/2025.
15. "A fusion protein FLR containing C. difficile FliC, Lipoprotein 2, and the receptor binding domain 2 (RBD2) of the binary toxin as a vaccine against C. difficile infection". Inventor: **Xingmin Sun**. US Provisional Patent Application No. 63/845,854. Date of filing: 07/17/2025

TEACHING, LECTURE

- **Course Director** for "Molecular Basis of Disease" (BCH6627), USF, since 2025
- **Course Director** for "Vaccines and Applied Immunology" (GMS6114), USF, since 2019
- "Foundations in Biomedical Sciences" (GMS 6001), USF, since 2015

- "Foundations in Medical Microbiology and Immunology" (GMS 6103), USF, since 2016
- "Introduction to Biotechnology" (BSC6436) with a focus on Microbiome, USF, since 2017
- Infectious Disease Unit Director for "Molecular Basis of Disease" (BCH6627), USF, since 2018
- "Drug Discovery" (PHC7935), USF, 2018 & 2022
- "MD Course 5", USF, 2021
- **Course Director** for "Microbiology", Shanghai Ocean University, Shanghai, China, 1994-1998
- **Course Director** for "Experimental Microbiology", Shanghai Ocean University, China, 1994-1998
- **Course Director** for "Principles and Technologies of Industrial Fermentation", Shanghai Ocean University, China, 1994-1998

TEACHING, SUPERVISORY

Junior Faculty:

- Shaohui Wang (PhD, Research Assistant Professor) (Aug 2022 – present)
- Mentoring committee for Dr. Tina Ho (Assistant Professor) in the College of Nursing, USF Health 2018.

Postdoctoral Researchers:

- Junling Qin (June 2024 – present)
- Anastasia Tomatsidou (Mar 2022 – Feb 2024)
- Soumyadeep Chakraborty (Apr 2021 – present)
- Shaohui Wang (Mar 2017 – Jul 2022)
- Duolong Zhu (July 2017 – Nov 2019)
- Yuanguo Wang (Nov 2014 – Mar 2017)
- Ying Cai (Mar 2015 – Mar 2017)
- Zhen Wu (Apr 2018 – Apr 2019)

MD Resident:

- Aimen Ben Ayad (July 2016 – July 2017)
- Adrit Roy (March 2025 – present)

PhD Students:

- Lubem Nathaniel Agbendeh (Dec 2021 – present)
- Ishani Wickramage (Aug 2017 – Feb 2020)
- Zhong Peng (PhD exchange program) (Mar 2016 – Mar 2018)
- Yuankai Wang (PhD exchange program) (Feb 2013 – Feb 2014)

Mentoring Committees for PhD Students at USF:

- Afroza Akhtar (2015 – 2020)
- Udoka Okaro (2015 – 2020)
- Brooke Nemec (2016 – 2021)
- Rohini Nimbalkar (2017 – 2022)
- Andrew Mcgill (2017 – 2019)
- Lulu Wei (2016 – 2020)
- Ma Su (2016 – 2021)
- Sylvia Singh (2016 – 2019)
- Michael Kemp (2016 – 2022)
- Stephanie Marroquim (2018 – 2021)
- Melissa Bikowitz (2019 – 2022)
- Mary-Elizabeth Jobson (2021 – present)
- Yerman Munoz (2021 – 2022)
- Emilee Mustor (2022 – present)
- Rachel Washburn (2023 – present)
- Alexis Rickman (2023 – present)
- Alisa Anderson (2023 – present)
- Patrick Consol (2023 – present)
- Erika Valdespino (2023 - present)
- Caroline Miller (2024 - present)

- Adewale James (2023 - present)
- Nichol John-Lewis Edwards (2023 - present)
- Pooya Mahdavi (2025 – present)
- Ken Chen (2026 – present)
- Sydney Granack (2026 – present)

Thesis Committee Chair for PhD students at USF:

- Brooke Nemec (June 14, 2021)
- Lulu Wei (Nov 4, 2020)
- Sylvia Singh (Nov 12, 2019)
- Anne-Claire D. Limon (Nov 7, 2019)

Rotation PhD Students at USF:

- Chao Zhang (2015)
- Christopher Hinojo (2015)
- Afroza Akhtar (2015)
- Michael Kemp (2016)
- Caroline Simmons (2017)
- Ishani Wickramage (2017)
- Justin Nicholas (2017)
- Garrett Enten (2018)
- Oluwasei Oluwatola (2021)
- Abiral Hasib Shourav (2022)
- Clem Marsilia (2023)
- Marvelous Adebowale (2023)
- Md. Abu Rahat (2024)
- Ken Chen (2024)
- Georgina Agyekum (2024)
- Krystin Marlin (2025)

Master Students:

- Varum Teja Kulala (May 2026 – present)
- Premitha Pagadala (Jan 2026 – present)
- Jaya Morla (Jan 2026 – present)
- Alondra Rivera Ramos (Sept 2025 – present)
- Brianna Mumford (Oct 2024 – Aug 2025)
- Veronica Gosnell (Sept 2023 – Aug 2025)
- Ramya Yada (May 2024- Aug 2024)
- Rajath Talpady (Sept 2023 – May 2024)
- Jonathon Bland (Oct 2022 – July 2023)
- Hassan Haidar (Oct 2021 – May 2023)
- Irene Arias (Oct 2021 – Aug 2022)
- Brittney Owens (Oct 2021 – May 2022)
- Zil iang Lim (Oct 2021 – May 2022)
- Nashwa El Hadidy (Oct 2020 – July 2021)
- Lauren Lapeter (Aug 2020 – Aug 2021)
- Syed Hussain (Aug 2020 – Aug 2021)
- Kristina Valladares (Aug 2019 – Aug 2020)
- Thuy Nguyen (Aug 2018 – July 2019)
- Holly Branthoover (Sept 2018 – June 2019)
- Trang Nguyen (Aug 2016 – July 2017)

Research Assistant:

- Maryam Yusuph (Aug 2024 – Oct 2025)
- Hiran Malinda (Oct 2017 – June 2021)

Visiting Scholars:

- Keshan Zhang (PhD, Associate Professor, Lanzhou Veterinary Research Institute, Academy of

Agricultural Science; Nov 2013 – Nov 2014).
- Song Zhao (MD, Associate Professor, Department of Gastroenterology, Jiangsu Province Hospital of Traditional Chinese Medicine, China; June 2014 – June 2015).
- Xianghong Ju (PhD, Professor, Guangdong Ocean University, Guangdong, China; Nov 2014 – Nov 2015).
- Yang Wang (PhD, Associate Professor, College of Animal Science and Technology, Henan University of Science and Technology; May 2015 – May 2016)
- Zhibian Duan (PhD, Professor, College of Animal Science, Shanxi Agricultural University, Sept – Dec 2016)
- Chunhui Li (MD, Associate Professor, Healthcare-associated Infection Control Center of Xiangya Hospital Central South University, China; Nov 2016 – Nov 2017).

Undergraduate Students:

- Tyler Tran (Oct 2025 – present)
- Rishi Mudiganti (April 2025 – present)
- Marco Hanna (May 2023 – June 2024)
- Justin Boumalhab (July 2023 – June 2024)
- Adrit Roy (May 2023 – June 2024)
- Bharath Subramanian (June 2022 – May 2023)
- Amreen Naveen (June 2022 – Dec 2022)
- Alexandra Rodier (Aug 2021 – May 2022)
- Joshua Heuler (June 2019 – May 2020)
- Ann Mathew (June 2019 – May 2020)
- Amy Amoah (June 2020 – May 2021)
- Domenica Flores (Aug 2019 – Aug 2020)
- Logan Suits (Aug 2018 – May 2019)
- Firras Khan (Aug 2018 – May 2019)
- Manushi Shan (Aug 2018 – May 2019)
- Ruhan Gagnani (Aug 2018 – May 2019)
- Jessica Bullock (Sept 2016 – May 2017)
- Angela Zhu (Sep 2016 – July 2017)
- Anisha Paulson (Sept 2016 – May 2017)
- Admir Krivdic (Sept 2016 – July 2017)

High School Students:

- Shreya Chatterjee (2025 summer)
- Alex Sun (2025 summer)
- Leahy Wan (2024 summer)
- Anastasia Achziger (2022 summer)

Awards received by lab members:

- "Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) Program Committee Award", USA. 2016 (Yuanguo Wang)
- "Anaerobe Travel Award". USA. 2016 (Yuanguo Wang)
- "ASM (American Society of Microbiology) Infectious Disease Fellow Travel Award", 2017 (Chunhui Li)
- "ASM Infectious Disease Fellow Program", 2018 (Chunhui Li)
- "ASM Travel Award", 2019 (Ishani Wickramage)
- "Clinical & Translational Science Award Doctoral Student Research". USF Health Research Day, Mar 2024 (Lubem N. Agbendeh)
- "Advancing Science Conference Grant". National Organization for the Professional Advancement of Black Chemist and Chemical Engineers (NOBCChE), USA. Jun 2024 (Lubem N. Agbendeh)
- "USF Fellowship" (Fall 2025 – Fall 2027 worth $40,000). University of South Florida Signature Research Doctoral Fellowship, Mar 2025 (Lubem N. Agbendeh)
- "2025 Northeast-Southeast Regional NOBCChE Conference Travel Award and Outstanding Presentation Award". National Organization for the Professional Advancement of Black Chemist and Chemical Engineers (NOBCChE), USA. Mar 2025 (Lubem N. Agbendeh)
- "FLMF Fellow (2025-2027)". ASM 2025 Future Leaders Mentorship Fellowship (FLMF) Program (Lubem

N. Agbendeh)

- **"**Graduate Student Research Award ($500 travel grant)"; 2025 Oral Presentation Winner in Health and Life Sciences at Annual Graduate Student Research Symposium. USF Office of Graduate Studies Mar 2025 (Lubem N. Agbendeh)
- "1st Place Winner in the Physical Sciences, Mathematics, and Environmental Studies Category". 2025 Conference of Florida Graduate Schools - Statewide Graduate Research Poster Symposium. (Lubem N. Agbendeh).
- "2025 Provost's Awards for Honorable Mention Award". Honorable Mention Award for Outstanding Teaching by a Graduate Teaching Assistant in STEM category (Lubem N. Agbendeh).
- Elected Member of Sigma Xi, University of South Florida Chapter, 2026 (Lubem N. Agbendeh).
- Selected for Internship with Eli Lilly, Feb 1-May 15, 2026 (Lubem N. Agbendeh).
- Marin Travel Endowment Recipient, Department of Chemistry, University of South Florida, 2026 (Lubem N. Agbendeh).

CONFERENCE / INVITED TALKS

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1. 2027. "TBD". Invited Seminar Speaker in the Department of Microbiology at the University of Illinois Urbana-Champaign, Mar 10-12, 2027
2. 2026. "Clostridioides difficile: Virulence Regulation and Vaccine Development". **Invited Speaker** at Gulf Coast Consortia, Sept 14, 2026.
3. 2026. "Microbiome-preserving strategies for prevention and treatment of *C. difficile* infection". **Invited Speaker** at "2026 Microbiome Townhall Meeting", University of South Florida, April 16, 2026.
4. 2026. "Clostridioides difficile: Virulence Regulation and Vaccine Development". **Invited Speaker** at USF Microbiomes Institute, University of South Florida, May 13, 2026
5. 2026. **Featured Speaker** at **"**11th International Conference on Vaccines Research and Development (Vaccines R&D-2026)", Boston, MA, November 9-11, 2026.
6. 2026. "Progress in the development of antimicrobials against ESKAPE pathogens". **Symposium Convener and Speaker.** ASM Microbe, Washington, DC. June 4-8, 2026
7. 2026. "Innovative approaches in vaccine development against C. difficile infection". **Invited Speaker.** 2026 Mini-Symposium, Center for Inflammation & Mucosal Immunology, College of Veterinary Medicine, University of Florida, Apri 10, 2026
8. 2026. "Clostridioides difficile: Virulence Regulation and Vaccine Development". **Invited Speaker.** Renaissance School of Medicine at Stony Brook University, Feb 19, 2026
9. 2025. "Decoding and Defeating Clostridioides difficile: Virulence Regulation and Vaccine Development". **Invited Speaker** at the Center for Molecular Psychiatry, USF, Dec 17, 2025
10. 2025. "Decoding and Defeating Clostridioides difficile: Virulence Regulation and Vaccine Development". **Invited Speaker** in the Department of Immunology & Microbial Disease at Albany Medical College, Nov 13-14, 2025
11. 2025. "The Receptor binding domain 2 (RBD2) of binary toxin (CDI) as a promising vaccine candidate protects both mice and hamsters against CDT challenge". Speaker at "14th International Conference on the Molecular Biology and Pathogenesis of Clostridia (ClostPath 2025)" (Sept 1-4, 2025. Institut Pasteur, Paris, France)
12. 2025. "Vaccine development for C. difficile infection". **Invited speaker** at "Vaccine Congress 2025" (July 10-11, 2025. Vienna, Austria (Hybrid Event))
13. 2025. "Cell wall protein 2 as a vaccine candidate protects mice against Clostridioides difficile infection". Speaker at the "American Society of Microbiology Annual Meeting" (June 19-23, 2025. Los Angeles, USA)
14. 2025 "Surface layer proteins as potential vaccine candidates against C. difficile infection". **Keynote Speaker and Session Chair** at the "6th International Virtual Conference on Vaccines and Infectious Disease" (June 14-15, 2025)
15. 2025. "Peptidoglycan hydrolase in C. difficile". Speaker at the "Florida Branch of the American Society for Microbiology 2025" (Mar 29-30, 2025. Ft. Myers, FL, USA)
16. 2024. "A novel peptidoglycan hydrolase plays pleiotropic roles in *C. difficile*". Speaker at 22nd International Conference on Bacilli and Gram-positive Bacteria" (Jun 18-21, 2024. Indiana University, USA).
17. 2024. "A novel peptidoglycan hydrolase plays pleiotropic roles in C. difficile". Speaker at "International Conference on Gram-positive Pathogens" (Oct 13-16, 2024. Omaha, Nebraska, USA)
18. 2024. "Cwp2 as a vaccine candidate protects mice against *Clostridioides difficile* infection". **Invited**

Speaker at "Vaccines Research & Development" (Nov 11-13, 2024. Boston, MA)

19. 2024. "Receptor binding domain 2 (RBD2) as an effective vaccine antigen against Clostridioides difficile binary toxin (CDT)". **Invited Speaker** at "Vaccines Summit 2024" (Nov 13-15, 2024. Boston, MA)
20. 2023. "Mucosal Vaccine Strategies against *Clostridioides difficile* infection". **Invited Speaker** at 8th International Conference on Vaccines Research & Development (Nov 6-8, 2023. Boston, MA)
21. 2023. "Novel multivalent vaccines against *Clostridioides difficile* infection. **Keynote Speaker** at International Summit on Vaccines research and Development (Sept 11-13, 2023. San Francisco, USA).
22. 2023. "Development of an effective nontoxigenic *Clostridioides difficile*-based oral vaccine against *C. difficile* Infection". **Invited Speaker** at Vaccines Summit 2023 (Nov 13-15, 2023. Boston, MA).
23. 2023. "Recombinant fusion protein vaccine containing *Clostridioides difficile* FliC and FliD protects mice against *C. difficile* Infection". **Invited Speaker** at Immunoforum 2023 (August 21-23, 2023. Vancouver, Canada)
24. 2023. "The challenges and status of vaccine development against *Clostridioides difficile* infection". **Lead Speaker** at Exploring New Horizons in Biotechnology (ENB-2023), Banaras Hindu University (Feb 10-12, 2023. Virtual attending. Varanasi, India).
25. 2023. "Clostridiodes difficile infection: Understanding its pathogenesis and designing novel approaches to blocking infection". Speaker at "PhD program recruitment visit" (Feb 10 and Mar 17, 2023. USF).
26. 2022. "Development of effective vaccines against *Clostridioides difficile* infection". **Convener and speaker** at American Society of Microbiology (ASM) 2022 meeting (June 9-13, 2022. Washington DC).
27. 2022. "The challenges and status of vaccine development against *Clostridioides difficile* infection" **Keynote Speaker** at International Conference and Expo on Applied Microbiology (Virtual Conference June 17-18, 2022).
28. 2022. "Multivalent vaccines against *Clostridioides difficile* infection". **Invited speaker** at 7th International Conference on Vaccines Research & Development (November 7-9, 2022. Boston, USA).
29. 2022. "FliW and CsrA govern flagellin (FliC) synthesis and play pleiotropic roles in virulence and physiology of *Clostridioides difficile* R20291". Speaker at Anaerobe 2022 (July 28-31, 2022. Seattle, USA)
30. 2022. "*Clostridioides difficile* infection: pathogenesis and designing novel approaches to blocking infection". **Invited Speaker** in the course "Drug Discovery" (April 6, 2022, USF)
31. 2021. "Bacterial Pathogenesis" (Nov 24, 2021. **Invited Speaker** at Dankook University, South Korea.)
32. 2021. "The nontoxigenic *Clostridioides difficile* CCUG33785 protects mice against infection with an epidemic *C. difficile* strain". **Convener and speaker** at World Microbe Forum, ASM and FEMS (June 20-24, 2021. Virtual Conference)
33. 2021. "*Clostridiodes difficile* infection: understanding the host immune response and designing novel approaches to blocking infection". (**Invited Speaker** in the Department of Chemistry, University of South Florida. Mar 31, 2021)
34. 2021. "Vaccine development against *Clostridioides difficile* infection". (**Invited Speaker** at Vaccines Conference-2021, Virtual Conference, Aug 26-28, 2021, Paris, France)
35. 2020. "Innate immunity". (December 9, 2020. **Invited Speaker** at Dankook University, South Korea.)
36. 2020. "Adaptive immunity". (December 10, 2020. **Invited Speaker** at Dankook University, South Korea,)
37. 2020. "*Clostridiodes difficile* infection: Understanding the host cell response". (January 28, 2020. **Invited Speaker** at University of Florida)
38. 2019. "The role of Dendritic Cells in *Clostridium difficile* infection". Speaker at Clostpath 11. (August 19-22, 2019. Leiden, The Netherlands)
39. 2019. "A Novel Bacteriophage Lysin-human Defensin Fusion Protein is Effective in Treatment of *Clostridioides difficile* Infection in Mice". Speaker at Bacterial Infection & Host Defense. (April 4-7, 2019. Suzhou, China)
40. 2019. "*Clostridium difficile* infection: Understanding the host cell response, antibiotic resistance and designing novel approaches to blocking infection". (**Invited Speaker** at Nanjing University of Traditional Chinese Medicine. April 17, 2019. Nanjing, China)
41. 2019. "*Clostridium difficile* infection: Understanding the host cell response, antibiotic resistance and designing novel approaches to blocking infection". (**Invited Speaker** at Hangzhou Medical College. April 19, 2019. Hangzhou, China)
42. 2019. "*Clostridium difficile* infection: Understanding the host cell response, antibiotic resistance and designing novel approaches to blocking infection". **Invited Speaker** in the Infectious Disease Symposium. (January 14, 2019, USF)
43. 2018. "Chimeric protein vaccines against *Clostridium difficile* infection in mice". Speaker at International Conference on Gram-positive Pathogens. (October 14-17, 2018. Omaha, USA).

44. 2018. **Invited Speaker** on the "5th Annual Anthony Galiardi Memorial Foundation Fundraising Event" to provide community education and knowledge on epidemiology, prevention, and treatment of *Clostridium difficile* infection. (December 22, 2018. Clearwater, FL)
45. 2018. *"Clostridium difficile* infection: Understanding the host cell response, antibiotic resistance and designing novel approaches to blocking infection". Speaker at USF-Irish Marine Biodiscovery Consortium. November 20, 2018. USF)
46. 2018. "Cwp22, a novel peptidoglycan cross-linking enzyme, plays pleiotropic roles in Clostridium difficile pathogenesis". **Invited Speaker** at 2nd International Congress and Expo Bacteriology. (November 15-16, 2018. Dallas, USA).
47. 2018. "Intestinal inflammation in *C. difficile* infection is regulated by Tpl2". **Invited Speaker** at International Conference and Exhibition on Immunology. (Nov 26-28, 2018. San Diego, USA).
48. 2018. "Emerging hypervirulent epidemic *Clostridium difficile* strains of St37 type (toxin A-B+) pose a potential threat in China". ASM meeting. (July 7-11, 2018. Atlanta, USA).
49. 2018. "Innate immune response to *Clostridium difficile* infection (CDI) and vaccine development against CDI" (April 4, 2018. **Invited Speaker** at Colorado State University, USA).
50. 2018. "*Clostridium difficile* infection: Understanding the host cell response and designing novel approaches to blocking infection". **Invited Speaker** in the course "Drug Discovery" (March 21, 2018. USF)
51. 2018 "*Clostridium difficile* infection: Understanding the host cell response and designing novel approaches to blocking infection". (March 1, 2018. **Invited Speaker** at Georgia State University, USA).
52. 2017. "Multivalent mucosal vaccines against *Clostridium difficile* infection". **Invited Speaker** at ASM Southeastern Branch meeting. (November 10-12, 2017. Saint Petersburg, FL, USA).
53. 2017. "TPL2 is a key regulator of inflammation in *C. difficile* infection". 10th International Conference on Molecular Biology and Pathogenesis of Clostridia. (August 7-10, 2017. Ann Arbor, Michigan, USA).
54. 2016. "Vaccine development against *Clostridium difficile* infection". (September 8, 2016. **Invited Speaker** at Dankook University, South Korea).
55. 2016. "The signaling events of TNF-alpha production in *Clostridium difficile* infection". (September 7, 2016. **Invited Speaker** at Dankook University, South Korea).
56. 2016. "The host cell response to *Clostridium difficile* infection". (September 9, 2016. **Invited Speaker** at Shanghai Jiao Tong University, China).
57. 2016. "The role of TNF-alpha in the pathogenies of *Clostridium difficile* infection". (September 14, 2016. **Invited Speaker** at Chinese Academy of Agricultural Sciences, Lanzhou Veterinary Research Institute, China).
58. 2016. "Oral immunization with non-toxigenic *C. difficile* strains expressing chimeric toxin fragments elicits protective immunity against *C. difficile* infection in both mice and hamsters". Speaker at Anaerobe 2016. (July 11-14, Nashville, TN).
59. 2016. "The critical role of RhoA in *Clostridium difficile* toxin-induced TNF-alpha production". (April 15, 2016. **Invited Speaker** in the Department of Cell Biology, Microbiology & Molecular Biology, University of South Florida).
60. 2016. "*Clostridium difficile* infection: Understanding the host cell response and developing novel vaccines to prevent infection". **Invited Speaker** in the Bacteriologist Group Meeting. (May 4, 2016. University of South Florida).
61. 2016. "*Clostridium difficile* infection: Understanding the host cell response and developing novel vaccines to prevent infection". (March 9, 2016. **Invited Speaker** in the College of Medicine, University of South Florida).
62. 2016. "*Clostridium difficile* infection: progress in vaccine development". **Invited Speaker** in the Signature Interdisciplinary Program in Allergy, Immunology, and Infectious Disease program. (January 21, 2016. University of South Florida).
63. 2015. "Novel chimeric vaccines against *Clostridium difficile* infection". **Invited Speaker** at the Immunology Summit 2015. (September 28-30, 2015. Houston, Texas).
64. 2015. "Novel multivalent mucosal/oral vaccines against *Clostridium difficile* infection". (July 21, 2015. **Invited Speaker** at Tufts University, Institute of Innovation, Boston).
65. 2015. "*Clostridium difficile* infection: Understanding the host cell response and designing novel approaches to blocking infection". (February 26, 2015. **Invited Speaker** at the University of South Florida).
66. 2015. "*Clostridium difficile* infection: Understanding the host cell response and designing novel approaches to blocking infection". Speaker at Sino-Micro Symposium 2015. (June 2, 2015. New Orleans, USA).

67. 2015. “Development of novel vaccines against *Clostridium difficile* infection”. (January 26, 2015. **Invited Speaker** in the Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts).
68. 2014. “A recombinant fusion protein (mTcd138) comprising the N-terminus of *Clostridium difficile* toxin B (TcdB) and the receptor binding domain of *C. difficile* toxin A (TcdA) provides full protection against *C. difficile* infection”. Speaker at 2nd International Congress on Bacteriology and Infectious Diseases. (November 17-19, 2014. Chicago, USA).
69. 2014. “Development of novel vaccines against *Clostridium difficile* infection”. (August 20, 2014. **Invited Speaker** at Tufts University, Tufts Institute for Innovation).
70. 2014. “Involvement of MAP kinases and RhoA in Clostridium difficile toxin A-induced TNF-alpha production by Macrophages”. (January 13, 2014. **Invited Speaker** in the Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts).
71. 2013. “*Clostridium difficile* infection: pathogenesis and development of immune-based prevention and therapy”. **Invited Speaker** at the BIT’s 3rd Annual World Congress of Microbes. (2013, Wuhan, China).
72. 2012. “TNF-alpha and *Clostridium difficile* infection”. Speaker at Campus-Wide Work-in-Progress. (February 14, 2012. Tufts University Cummings School of Veterinary Medicine.)
73. 2011, “A mouse relapse model of *C. difficile* infection and its application in evaluating immunotherapies against disease". Speaker at the 7th International Conference on the Molecular Biology and Pathogenesis of the Clostridia. (October 25-29, 2011. Ames, IA, USA).
74. 2011, “A chimeric vaccine prevents primary and recurrent *Clostridium difficile* infection”. Speaker at the Fourteenth Annual Conference on Vaccine Research. (May 16-18, 2011. Baltimore, USA).
75. 2007, “Architecture of the 99 bp DNA – Six Protein Regulatory Complex of the λ *att* Site”. Speaker at the American Society for Biochemistry and Molecular Biology Annual Conference. (April 28-May 2, 2007. Washington, DC. USA).
76. 2006, “Accessory DNA-bending proteins confer a complex contour on the 99 bp regulatory DNA of bacteriophage lambda *att* site as determined by triangulation of FRET distances”. Speaker at the Nucleic Acids Conference. (June 4-9, 2006. Salve Regina University, RI, USA.).

ACADEMIC SERVICES

Services for National and International Grant Review Panels

- NIH Vaccines Against Infectious Diseases (VID) Study Section Panel (Oct 15 -16, 2026)
- NIH P01 Review Panel ZRG1 DCAI S (40) (Aug 6-7, 2026)
- NIH Immunity and Host Defense (IHD) Study Section Panel (April 9-10, 2026)
- Grant Review Panel for UK Research and Innovation (UKRI). Dec 2025
- Grant Review Panel for Swiss National Science Foundation. Dec 2025
- Grant Review Panel for Oak Ridge Associated Universities. Dec 2025
- NIH Drug Discovery and Molecular Pharmacology A (DMPA) Study Section Panel (Jan 22-23, 2026)
- NIH Drug Discovery and Molecular Pharmacology A (DMPA) Study Section Panel (June 26-27, 2025)
- NIH Immunity and Host Defense (IHD) Study Section Panel (April 23-25, 2025)
- Auburn University’s Research Support Program (RSP). March 2025
- UK Research and Innovation (UKRI). March 24, 2025
- NIH Drug Discovery and Molecular Pharmacology A (DMPA) Study Section Panel (Nov 5-6, 2024)
- Grant Review Panel for UK Research and Innovation (Nov 2024)
- Grant Review panel for Canada Foundation for Innovation (March 2024)
- Grant Review panel for Swiss National Science Foundation (Feb 2024)
- Grant Review panel for German Research Foundation (Jan 2024)
- **Co-Chair** for NIH Center for Scientific Review Special Emphasis Panel (ZRG1 IIDA-V (02) (Jul 17, 2024)
- NIH Vaccines Against Infectious Diseases (VID) Study Section Panel (Feb 29 -Mar 1, 2024)
- NIH Bacterial-Host Interactions (BHI) Study Section Panel (Nov 2-3, 2023)
- NIH Digestive System Host Defense, Microbial Interactions and Immune and Inflammatory Diseases (DHMI) Study Section Panel (June 29-30, 2023)
- NIH Topics in Bacterial Pathogenesis ZRG1 IIDB-k (90) Study Section Panel (Mar 29, 2023)
- Ad hoc Reviewer for French National Research Agency (May 2023)
- NIH Small Business: Anti-infective Therapeutics Study Section Panel (ZRG1 DCAI) (Dec 7-8, 2022)

- NIH Host Interactions with Bacterial Pathogens (HIBP) Study Section Panel (June 29-30, 2022)
- NIH Digestive System Host Defense, Microbial Interactions and Immune and Inflammatory Diseases (DHMI) Study Section Panel (Feb 24-25, 2022)
- NIH Director's New Innovator Award (DP2) Review Panel ZRG1 CVRS-A70 (Oct 12 – Dec 10, 2021)
- Ad hoc grant reviewer for Oak Ridge Associated Universities (08/15/2022 – 10/01/2022)
- NIH Innate Immunity and Inflammation Study Section Panel (June 23-25, 2021)
- Ad hoc grant review for Hong Kong Research Grants Council (RGC) (Mar 2021)
- NIH Director's New Innovator Award (DP2) Review Panel ZRG1 CVRS-A70 (Mar 16-17, 2021)
- **Chair** for NIH Study Section Panel (NIAID R34 and U01) (July 16, 2020)
- NIH Study Section Panel (IDM-B 81) (June 30, 2020)
- NIH Study Section Panel (Gastrointestinal Mucosal Pathobiology Study Section) (Feb 27-28, 2020)
- Ad hoc grant review for Medical Research Council, UK (Sept 2020)
- NIH Study Section Panel (Topics in Bacterial Pathogenesis study section) (July 18, 2019)
- NIH Study Section Panel (Topics in Bacterial Pathogenesis study section) (Mar 20, 2019)
- Ad hoc grant review panel for Cancer Research UK, Jan 16, 2019
- Ad hoc grant reviewer for Oak Ridge Associated Universities 07/31/2019 – 08/22/2019.
- NIH Study Section Panel (IDM-B 81) (Nov 6, 2018)
- NIH Study Section Panel (Innate Immunity and Inflammation III) (Feb 15-16, 2018)
- NIH Study Section Panel (IDM-B 81) (Mar 23, 2018)
- Grant Review for FINOVI (France) (Oct 15, 2018)
- NIH Study Section Panel (IDM-B 81) (Bethesda, NIH, Nov 13, 2017)
- NIH Study Section Panel (IDM-B 80s) (Bethesda, NIH, July 11, 2016)
- Discovery Awards Gastrointestinal Diseases (DIS-GID) Panel of the Peer Reviewed Medical Research Program (PRMRP) of the Department of Defense Congressionally Directed Medical Research Programs (CDMRP) (2017)
- Review panel for Medical Research Council (MRC), UK (March 2016; October 2013)

Services for Scientific Journals and Conferences

- Scientific Committee member of "the 4th International Online Conference on Vaccines". Mar 8-10, 2027.
- Scientific Committee of "11th International Conference on Vaccines Research & Development". Boston, MA. Nov 9-11, 2026
- Board Member and Organizing Committee. Florida Branch of the American Society of Microbiology Annual Meeting, Florida Gulf Coast University, USA. March 28-30, 2026
- Abstract Reviewer Committee. ASM Microbe, Washington, DC. June 4-8, 2026
- Symposium Convener. "Progress in the development of antimicrobials against ESKAPE pathogens". ASM Microbe, Washington, DC. June 4-8, 2026
- Session Chair for "6th International Virtual Conference on Vaccines & Infectious Disease", June 14-15, 2025
- Scientific Committee Member of "Vaccine Congress 2025," Vienna, Austria. July 10-11, 2025
- Scientific Committee Member of the "3rd International Online Conference on Toxins", Sept 10-12, 2025
- Judge for ASM Florida Branch meeting (Mar 29-30, 2025. Ft. Myers, FL, USA)
- Judge for ASM Southeast Branch meeting (Sept 6-8, 2024. Tampa, FL, USA)
- Special Issue Editor for "Vaccines" (2024 -present, IF 5.2)
- Associate Editor for "Microbiological Research" (2024-2025, IF 6.1)
- Associate Editor for "Molecular Medicine" (2019-2024, IF 6.38)
- Associate Editor for "Frontiers in Microbiology" (2019-present, IF 5.08)
- Associate Editor for "Frontiers in Immunology" (2023-present, IF 7.3)
- Editorial Board for "Infection and Immunity" (2016-present, IF 3.94)
- Editorial Board for "Applied and Environmental Microbiology" (2019-present, IF 5.00)
- Editorial Board for "Animal Diseases" (2024-present)
- Ad hoc reviewer for **72 journals**: Science, *Nature Communication, Lancet, Proceedings of the National Academy of Sciences of the United States of America (PNAS), mBio, Cell Reports, Gut Pathogen, Infection and Immunity, Applied and Environmental Microbiology, Journal of Bacteriology, Molecular Microbiology, Journal of Clinical Microbiology, Antimicrobial Agents and Chemotherapy, New England*

Journal of Medicine, Journal of Immunology, Proteomics, Plos One, Beneficial Microbes, Pathogens and Disease, Frontiers in Immunology, Scientific Reports, Microbiol. Spectr, mSystems, npj Vaccines, Vaccines, Journal of Functional Biomaterials, Trends in Pharmacological Sciences, Journal of Inflammation, International Journal of Biological Macromolecules, Emerging Microbes and Infections, Probiotics and Antimicrobial Proteins, iScience, Engineering, Communications Biology, Anaerobe, Infection, Genetics and Evolution, Expert Review in Drug Discovery, Nanomaterials, Informatics in Medicine Unlocked, Cell Reports, Genes, BMC Microbiology, Toxins, European Journal of Inflammation, Cells, Gene Therapy, Digestive Diseases and Sciences, Molecular Medicine, Acta Biochimica et Biophysica Sinica, Plos Pathogens, Bioorganic Chemistry, life Sciences, Biomedical Journal, Annals of Translational Medicine, Infection and Drug Resistance, Journal of Clinical Medicine, Expert Opinion on Biological Therapy, Infection and Microbe, Clinical Microbiology and Infections, Human Vaccines and Immunotherapeutics, Stem Cells International, Current Medicinal Chemistry, mSphereDirect, Pediatric Research, Kuwait Journal of Science, Genes and Genomics, Future Microbiology, Current Medical Research and Opinion, JOVE, Beneficial Microbes, Microbiome, Pathogens and Disease, eBioMedicine, Proteomics, Frontiers in Microbiology.

- Session chair for Vaccines Summit 2024 (Nov 13-15, Boston, USA)
- Judge for USF Health Research Day (2016, 2017, 2019, 2020. 2021, 2022, 2023)
- Convener and speaker at American Society of Microbiology (ASM) 2022 meeting (June 9-13,2022)
- Organizing Committee for the Global Experts Meeting on Toxicology (July 14-16, 2022)
- Convener and speaker at ASM 2021 meeting (June 20-24,2021)
- Judge for iPosters at ASM 2021 meeting (June 20-24, 2021)
- Moderator for 12th International Conference on the Molecular Biology & Pathogenesis of the Clostridia (Sept 13-16, 2021)
- Judge for Florida and Southeastern Branches ASM, Virtual Meeting (Mar 26, 2021)
- Organizing Committee for "International Conference and Exhibition on Immunology" 2018, San Diego, USA
- Chair of Bacterial Pathogenesis Session, ASM Southeastern Branch Meeting (2017)
- Chair of the 3rd Annual Symposia of Bacteriology and Infection, Wuhan, China (July 30–Aug 1, 2013)

Services for University of South Florida (USF), Academic Societies and Community

- Coordinator of Mock NIH Study Section Review, Department of Molecular Medicine, USF since 2026
- Judge for Department of Molecular Medicine Retreat, USF. April 17, 2026
- Judge for Tampa Area Bacteriology Symposium (TABS), USF. May 10, 2026
- Peer Reviewer for Technology & Innovation (the official journal of the National Academy of Inventors) since 2026
- Online Judge for RTX Invention Convention U.S. Nationals 2026 Finalists, May 15-22, 2026
- Advisory Board Member, USF Genomics Cores since 2026
- Co-sponsor of NIH K Fellowship Club. Morsani College of Medicine, USF since 2026
- Member of Council on Research, Scholarship, and Creativity, USF Senate since 2026
- Representative for American Association of Immunologists (AAI)'s Virtual Capitol Hill Day. Aug 20, 2025
- Speaker at USF Latinos Student in Action Club, Oct 8, 2025
- Mentor for "Global Academic Inventors Network" for NAI (National Academy of Inventors) since 2025
- Mentor for "ASM future Leaders Mentorship Fellowship (FLMF), May1, 2025 – April 30, 2027
- Faculty Recruitment Committee for Immunology Faculty Search (2025)
- Judge for Invention Convention Florida Competition (April 12, 2025)
- Review and selection panel member for "Excellence in Innovation Award at USF", USF (2023, 2025)
- Judge for USF Graduate symposium (March 26, 2025)
- Judge for high-school student debate tournament, Florida Gulf Coast Catholic Forensics league (FGCCFL) (Jan 16, 2025)
- Judge for high-school student debate tournament, Florida Gulf Coast Catholic Forensics league (FGCCFL) (Nov 9, 2024)
- Speaker for "Great American Teach-In" program at Young Middle Magnet School, Tampa, FL (Nov 25, 2024)
- Interview and Recruitment Committee for PhD program in the Morsani College of Medicine, USF (2017, 2018, 2019, 2020, 2022, 2023, 2024, 2025)
- USF Faculty Senate (Since Sept 2024)

- Faculty Recruitment Committee for Microbiome Faculty Search (2023, 2024, 2025, 2026)
- Faculty Recruitment Committee for Microbe and Infection Faculty Search (2024)
- Executive Committee Member of USF Chapter of National Academy of Inventors, since 2023
- President for USF Chapter of National Academy of Inventors, since 2023
- Speaker for "Great American Teach-In" program, Leto High School, Tampa, FL. Dec 8, 2023
- Vice President for USF Chapter of National Academy of Inventors (2022)
- Speaker at 9th Annual Anthony Gagliardi Memorial Foundation Fundraising to support research on *Clostridioides difficile* (Dec 17, 2022. Clearwater, FL)
- Secretary for USF Chapter, National Academy of Inventors (2021)
- The Nominating Committee of the Morsani College of Medicine Faculty Council (Since 2021)
- Council Committee on Faculty Issues at USF, since 2020
- Member of the Research Committee**,** College of Medicine at USF (2017-2021)
- Chair of Research Committee of College of Medicine at USF (2019-2020)
- IACUC Committee Member of the University of South Florida (USF) (since 2020)
- Institutional Biosafety Committee (IBC) Member of the University of South Florida (USF) (since 2017)
- Departmental Representative of Faculty Council for the College of Medicine at USF (2017-2019)
- Outstanding Service as an Online Mentor of the ASM Minority Mentoring Program 2011
- Search Committees for faculty positions in the Department of Molecular Medicine, USF (2017 and 2018)

PROFESSIONAL MEMBERSHIP

- American Society for Microbiology
- Anaerobe Society of the Americas
- Society for Mucosal Immunology
- The American Association of Immunologists
- American Association for the Advancement of Science (AAAS)
- American Society for Microbiology Southeast Branch
- National Academy of Inventors (NAI)
- International Society for Vaccines (ISV)

MEDIA REPORT

- **2025:** Xingmin Sun was recognized with research achievement and innovation excellence awards. (https://www.usf.edu/research-innovation/news/2025/eleven-usf-faculty-being-recognized-with-research-achievement-and-innovation-excellence-awards.aspx)
- **2025:** Xingmin Sun was named senior members of National Academy of Inventors. (https://www.usf.edu/research-innovation/news/2025/nine-usf-faculty-named-senior-members-of-national-academy-of-inventors.aspx)
- **2024:** USF Tech Tour featuring Dr. Xingmin Sun. (https://www.youtube.com/watch?v=vt0ecITxv90)
- **2024:** USF, Corridor collaboration supports infrastructure innovation, vaccine development and infection fighting strategies. (https://www.usf.edu/research-innovation/news/2024/usf-corridor-collaboration-supports-infrastructure-innovation-vaccine.aspx)
- **2023:** Bereaved son takes a swing at deadly infection. (https://giving.usf.edu/impact/bereaved-son-takes-swing-deadly-infection)
- **2022:** Antibiotics intended to heal can actually encourage resistance of life-threatening C. difficile infection. (https://hscweb3.hsc.usf.edu/blog/2022/10/12/antibiotics-intended-to-heal-can-actually-encourage- resistance-of-life-threatening-c-difficile-infection/)
- **2020:** Five USF Faculty Members Recognized with Excellence in Innovation Awards (https://www.usf.edu/news/2020/five-faculty-members-recognized-with-excellence-in-innovation-awards.aspx)
- **2018:** Media interview at the American Society of Microbiology Meeting 2018 (USF Health microbiologist shares team's progress on vaccine for C. difficile infection). (https://hscweb3.hsc.usf.edu/blog/2018/06/13/usf-health-microbiologist-shares-teams-progress-on-vaccine-for-c-diff-infection/)

- **2018:** A vaccine for Clostridium difficile? Dr. Sun shares what to consider. (https://www.contagionlive.com/videos/vaccine-for-clostridium-difficile-what-to-consider)
- **2018:** Dr. Sun shares current progress on developing vaccine for Clostridium difficile infection at the ASM 2018 Conference. (https://www.contagionlive.com/view/vaccine-for-clostridium-difficile-current-progress)
- **2018:** Xingmin Sun was recognized in 2018 Outstanding Research Achievement Awards. (https://www.research.usf.edu/absolute-news/templates/usfri-template.aspx?articleid=7255&zoneid=1)
- **2018:** Anthony Gagliardi Foundation donates $15,000 to Clostridium difficile research at USF Health. (https://hscweb3.hsc.usf.edu/giving/2018/10/26/anthony-gagliardi-foundation-donates-15000-to-c-diff- research-at-usf-health/)
- **2014:** Tufts Institute for Innovation has great expectations for tackling some of the world's formidable public health problems. (http://now.tufts.edu/articles/discovery-impact?utm_source)
- **2006:** Scientists map structure of DNA-doctoring protein complex (Science Daily, Dec 29, 2006). (http://www.sciencedaily.com/releases/2006/12/061207160154.htm)