

## **Curriculum Vitae**

### **XUAN WANG**

Associate Professor  
School of Life Sciences  
Arizona State University  
Tempe, AZ 85287

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## **EDUCATION**

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- 2003-2008 Ph.D. University of Michigan, Ann Arbor, Michigan  
Molecular, Cellular and Developmental Biology  
Dissertation Title: "The Determinants of Bacterial Amyloid  
Nucleation and Polymerization"  
Laboratory of Matthew R. Chapman
- 2000-2003 M.S. Graduate School of Chinese Academy of Sciences,  
Biochemistry and Molecular Biology  
Thesis Title: "Inhibition of Polyphenols on Eukaryotic Fatty Acid  
Synthase"  
Laboratory of Wei-Xi Tian
- 1995-2000 B.S. University of Science and Technology of China, China

## **PROFESSIONAL EXPERIENCE**

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- 11/2018-present Arizona State University, Tempe, AZ  
Co-Director of Microbiology Graduate Program, Arizona State University
- 08/2020-present Arizona State University, Tempe, AZ  
Associate Professor at the School of Life Sciences (SOLS), Arizona State University
- 08/2013-07/2020 Arizona State University, Tempe, AZ  
Assistant Professor at the School of Life Sciences (SOLS), Arizona State University
- 08/2011-07/2013 University of Florida, Gainesville, FL  
Assistant Scientist at the Department of Microbiology and Cell Science, University of  
Florida
- 10/2008-07/2011 University of Florida, Gainesville, FL  
Postdoctoral Associate at the Department of Microbiology and Cell Science, University  
of Florida
- 08/2003-09/2008 University of Michigan, Ann Arbor, MI  
Graduate Student at the Department of Molecular, Cellular and Developmental Biology,  
University of Michigan, Ann Arbor

09/2000-06/2003 Graduate School of Chinese Academy of Sciences, Beijing, China  
Master Student at the Department of Biology, Graduate School of Chinese Academy of Sciences, Beijing, China

## **PUBLICATION**

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### **Published Peer-Reviewed Articles**

[Publications at ASU] Trainees: <sup>u</sup>undergraduate; <sup>g</sup>graduate; <sup>p</sup>postdoc

1. Flores, A. <sup>g</sup>, Choi, H. <sup>u</sup>, Martinez, R. <sup>g</sup>, Onyeabor, M. <sup>g</sup>, Ayla EZ. <sup>u</sup>, Godar, A. <sup>g</sup>, Machas, M. <sup>g</sup>, Nielsen, D. and **Wang X** (2020) Catabolic Division of Labor Enhances Production of D-Lactate and Succinate from Glucose-Xylose Mixtures in Engineered *Escherichia coli* Co-culture Systems. **Front Bioeng Biotechnol.** 8:329.  
doi:10.3389/fbioe.2020.00329
2. Kurgan, G. <sup>g</sup>, Kurgan, L. <sup>u</sup>, Schneider, A. <sup>u</sup>, Onyeabor, M. <sup>g</sup>, Rodriguez-Sanchez, Y. <sup>u</sup>, Taylor, E. <sup>u</sup>, Carbonell, P., Martinez, R. <sup>g</sup>, Shi, X., Gu, H. and **Wang, X.**, (2019) Identification of major malate export systems in an engineered malate producing *Escherichia coli* aided by substrate similarity search. **Appl Microbiol Biotechnol.** doi: 10.1007/s00253-019-10164-y.
3. Martinez, R. <sup>g</sup>, Flores, A. <sup>g</sup>, Dufault, M. <sup>u</sup>, **Wang, X.** (2019) The XylR variant (R121C and P363S) releases arabinose-induced catabolite repression on xylose fermentation and enhances coutilization of lignocellulosic sugar mixtures. **Biotechnol Bioeng.** doi:10.1002/bit.27144
4. Kurgan, G. <sup>g</sup>, Sievert, C. <sup>p</sup>, Flores, A. <sup>g</sup>, Schneider, A. <sup>u</sup>, Billings, T. <sup>u</sup>, Panyon, L., Morris, C. <sup>u</sup>, Taylor, E. <sup>u</sup>, Kurgan, L. <sup>u</sup>, Cartwright, R., **Wang, X.** (2019) Parallel experimental evolution reveals a novel repressive control of GalP on xylose fermentation in *Escherichia coli*. **Biotechnol Bioeng.** doi:10.1002/bit.27004
5. Flores, A. <sup>g</sup>, Zeynep Ayla, E. <sup>u</sup>, Nielsen, D., **Wang, X.** (2019) Engineering a synthetic, catabolically orthogonal coculture system for enhanced conversion of lignocellulose-derived sugars to ethanol. **ACS Synth Biol.** doi:10.1021/acssynbio.9b00007
6. Kurgan, G. <sup>g</sup>, Panyon, L., Rodriguez-Sanchez, Y. <sup>u</sup>, Pacheco, E. <sup>u</sup>, Nieves, L. M., Mann, R. <sup>u</sup>, Nielsen D., **Wang, X.** (2019) Bioprospecting of native efflux pumps to enhance furfural tolerance in ethanologenic *Escherichia coli*. **Appl Environ Microbiol.** 85:e02985-18
7. Flores, A. <sup>g</sup>, **Wang, X.**, Nielsen, D. (2019) Recent trends in integrated bioprocesses: aiding and expanding microbial biofuel/biochemical production. **Curr Opin Biotechnol.** 57, 82-87
8. Machas, M., Kurgan, G. <sup>g</sup>, Flores, A. <sup>g</sup>, Schneider, A. <sup>u</sup>, Jha, A., Coyle, S., Varman, A., **Wang, X.**, and Nielsen D. (2018) Emerging tools, enabling technologies, and future opportunities for the bioproduction of aromatic chemicals. **J Chem Technol Biotechnol.** doi:10.1002/jctb.5762
9. Sievert, C. <sup>p</sup>, Nieves, L. M., Panyon, L. A., Loeffler, T. <sup>u</sup>, Morris, C. <sup>u</sup>, Cartwright, R., **Wang, X.** (2017) Experimental evolution reveals an effective avenue to release catabolite repression via mutations in XylR. **Proc Natl Acad Sci U S A.** 114, 7349-7354

10. Nieves, L. M., Panyon, L. A., **Wang, X.** (2015) Engineering sugar utilization and microbial tolerance toward lignocellulose conversion. **Front Bioeng Biotechnol.** 3:17. doi: 10.3389/fbioe.2015.00017
11. Geddes, R. D., **Wang, X.**, Yomano, L. P., Miller, E. N., Zheng, H., Shanmugam, K. T., Ingram, L. O. (2014) Polyamine transporters and polyamines increase furfural tolerance during xylose fermentation with ethanologenic *Escherichia coli* strain LY180. **Appl Environ Microbiol.** 80, 5955-5964

[Publication prior to ASU]

12. Zheng, H., **Wang, X.**, Yomano, L. P., Shanmugam K. T., Ingram, L. O. (2013) Improving *Escherichia coli* FucO for furfural tolerance by saturation mutagenesis of individual amino acid positions. **Appl Environ Microbiol.** 79, 3202-3208
13. **Wang, X.**, Yomano, L. P., Lee, J. Y.<sup>u</sup>, Sean, S. Y., Zheng, H., Mullinnix, M. T., Shanmugam, K. T., Ingram, L. O. (2013) Engineering furfural tolerance in *Escherichia coli* improves the fermentation of lignocellulosic sugars into renewable chemicals. **Proc Natl Acad Sci U S A.** 110,4021-4026
14. Zheng, H., **Wang, X.**, Yomano, L. P., Shanmugam, K. T., Ingram, L. O. (2012) Increase in furfural tolerance in ethanologenic *Escherichia coli* LY180 by plasmid-based expression of *thyA*. **Appl Environ Microbiol.** 78, 4346-4352
15. **Wang, X.**, Miller, E. N., Yomano, L. P., Shanmugam, K. T., Ingram, L. O. (2012) Increased furan tolerance in *Escherichia coli* due to a cryptic *ucpA* gene. **Appl Environ Microbiol.** 78, 2452-2455
16. **Wang, X.\***, Miller, E. N.\*, Yomano, L. P., Zhang, X. Shanmugam, K. T., Ingram, L. O. (2011) Increased furfural tolerance due to overexpression of NADH-dependent oxidoreductase FucO in *Escherichia coli* strains engineered for the production of ethanol and lactate. **Appl Environ Microbiol.** 77, 5132-5140. \*Equally contributed.
17. Zhang, X. \*, **Wang, X.\***, Shanmugam, K. T., Ingram, L.O. (2011) L-Malate production by metabolically engineered *Escherichia coli*. **Appl Environ Microbiol.** 77, 427-434. \*Equally contributed.
18. Jarboe, L., Zhang, X., **Wang, X.**, Moore, J., Shanmugam, K. T., Ingram, L. O. (2010) Metabolic engineering for production of biorenewable fuels and chemicals: contributions of synthetic biology. **J Biomed Biotechnol.** 2010:761042
19. **Wang, X.**, Zhou, Y., Ren, J.<sup>u</sup>, Hammer, N. D. and Chapman, M. R. (2010) Gatekeeper residues in major curlin subunit modulate bacterial amyloid fiber biogenesis. **Proc Natl Acad Sci U S A.** 107, 163-168
20. **Wang, X.** and Chapman, M. R. (2008) Curli provide the template for understanding controlled amyloid propagation. **Prion.** 2, 57-60
21. **Wang, X.** and Chapman, M. R. (2008) Sequence determinants of bacterial amyloid formation. **J Mol Biol.** 380, 570-580
22. **Wang, X.**, Hammer, N. D. and Chapman, M. R. (2008) The molecular basis of bacterial amyloid polymerization and nucleation. **J Biol Chem.** 283, 21530-21539  
\*Selected by Faculty of 1000 Biology
23. Hammer, N.D., **Wang, X.**, McGuffie, B.A. and Chapman, M. R. (2007) Amyloids: friend or foes? **J Alzheimers Dis.** 13, 407-419
24. **Wang, X.**, Smith, D. R., Jones, J. W., and Chapman, M. R. (2007) *In vitro* polymerization of a functional *Escherichia coli* amyloid protein. **J Biol Chem.** 282, 3713-3719

25. Zhang, R., Xiao, W., **Wang, X.**, Wu, X., and Tian, W. (2006) Novel inhibitors of fatty-acid synthase from green tea (*Camellia sinensis* Xihu Longjing) with high activity and a new reacting site. **Biotechnol Appl Biochem.** 43, 1-7
26. Du, Y. T., **Wang, X.**, Wu, X. D., and Tian, W. X. (2005) Keemun black tea extract contains potent fatty acid synthase inhibitors and reduces food intake and body weight of rats via oral administration. **J Enzyme Inhib Med Chem.** 20, 349-356
27. **Wang, X.**, Song, K. S., Guo, Q. X., and Tian, W. X. (2003) The galloyl moiety of green tea catechins is the critical structural feature to inhibit fatty-acid synthase. **Biochem Pharmacol.** 66, 2039-2047
28. Wang, F., **Wang, X.**, Liu, Y., Tian, W. X., and Zhou, H. M. (2003) Inhibitive effect of zinc ion on fatty acid synthase from chicken liver. **Int J Biochem Cell Biol.** 35, 391-400
29. **Wang, X.**, and Tian, W. (2001) Green tea epigallocatechin gallate: a natural inhibitor of fatty-acid synthase. **Biochem Biophys Res Commun.** 288, 1200-1206

### **Invited Book Chapters**

[Publications at ASU] Trainees: <sup>g</sup>graduate

1. Onyeabor, M.<sup>g</sup>, Martinez, R.<sup>g</sup>, Kurgan, G.<sup>g</sup> and **Wang, X.** (2020) Engineering transport systems for microbial production. **Adv Appl Microbiol.** (Elsevier) doi:10.1016/bs.aambs.2020.01.002
2. Flores, A.<sup>g</sup>, Kurgan, G.<sup>g</sup>, **Wang, X.** (2017) Engineering bacterial sugar catabolism and tolerance toward lignocellulose conversion. Chapter Six in Engineering of Microorganisms for the Production of Chemicals and Biofuels from Renewable Resources. G. Gosset ed. (Springer) ISBN 9783319517285 pp. 147-180
3. Jain, A., Hammer, N.D., **Wang, X.**, McGuffie, B.A. and Chapman, M. R. (2017) Amyloid: Friend and Foe. Handbook of Infection and Alzheimer's Disease. J. Miklossy ed. (IOS Press) ISBN 9781614997061 pp. 297-312
4. Immethun, C.M., Henson, W.R., **Wang, X.**, Nielsen, D.R. and Moon T.S. (2016) Engineering central metabolism for production of higher alcohol-based biofuels. Chapter One in Biotechnologies for Biofuel Production and Optimization. C. Eckert and C. Trinh ed. (Elsevier) ISBN 9780444634757 pp. 1-34

[Publication prior to ASU]

5. **Wang, X.** and Chapman, M. R. (2010) Functional microbial amyloids: Protein misfolding done right. In Functional Amyloid Aggregation, S. Rigacci and M. Bucciattini, ed. (ISBN: 978-81-308-0425-5) pp. 21-35.

### **POSTER PRESENTATIONS**

[Poster presentation at ASU] Trainees: <sup>u</sup>undergraduate; <sup>g</sup>graduate; <sup>p</sup>postdoc; \*Presenter

1. Flores, A.<sup>g\*</sup>, Zeynep Ayla, E.<sup>u</sup>, Choi, H.<sup>u</sup>, Varman, A., Nielsen, D., **Wang, X.** Engineering synthetic, catabolically-orthogonal co-culture systems for enhanced conversion of lignocellulose-derived sugars to fuels and chemicals. 2019 AIChE Annual Meeting, Orlando, Florida, 2019.
2. Martinez, R.<sup>g\*</sup>, Sievert, C.<sup>p</sup>, Nieves, L., Flores, A.<sup>g</sup>, Dufault, M.<sup>u</sup>, **Wang, X.** Mutations in the xylose catabolic regulator XylR release arabinose-induced carbon

- catabolite repression in *Escherichia coli*. Society for Advancement of Chicanos/Hispanics and Native Americans in Science, San Antonio, Texas, 2018.
3. Sievert, C.<sup>p</sup>, Martinez, R.<sup>g\*</sup>, Panyon, L. A., Nieves, L. M., Cartwright, R., **Wang, X.**<sup>\*</sup> Convergent mutations occurring during experimental evolution reveal an effective solution to release catabolite repression in *E. coli* and a novel quasi-heterozygous advantage. Annual meeting of Synthetic Biology, Engineering, Evolution & Design, Scottsdale, Arizona, 2018.
  4. Machas, M.<sup>\*</sup>, Kurgan, G.<sup>g</sup>, **Wang, X.**, Nielsen, D. Convergent engineering and understanding bacterial tolerance to heterologous aromatic biochemicals through transporter library screening and transcriptome analysis. Annual meeting of Synthetic Biology, Engineering, Evolution & Design, Scottsdale, Arizona, 2018
  5. Machas, M.<sup>\*</sup>, Kurgan, G.<sup>g</sup>, **Wang, X.**, Nielsen, D. Exploring non-natural pathways and native efflux systems for improved aromatic chemical production in *Escherichia coli*. 255th ACS National Meeting & Exposition, New Orleans, Louisiana, 2018
  6. Holland, S.<sup>p\*</sup>, **Wang, X.**, Vermaas, W. Increasing NADPH availability in fatty acid producing strains of *Synechocystis* sp. PCC 6803. The 27th Western Photosynthesis Conference, Oracle, Arizona, 2018. (**Steven Holland won a travel grant**)
  7. Kurgan, G.<sup>g\*</sup>, Machas, M., Panyon, L., Rodriguez-Sanchez, Y.<sup>u</sup>, Pacheco, E.<sup>u</sup>, Nieves, L., Nielsen, D., **Wang, X.** Repurposing molecular pumps: Tolerance engineering through exploitation of native efflux systems. Annual Meeting of Society of Industrial Microbiology and Biotechnology, Boulder, Colorado, 2017. (**Gavin Kurgan won the 'Best Poster Presentation' in Metabolic Engineering Section**)
  8. Flores, A.<sup>g\*</sup>, Zeynep Ayla, E.<sup>u</sup>, Nielsen, D., **Wang, X.** Engineering a synthetic co-culture system for enhanced co-utilization of lignocellulose-derived sugar mixtures. Annual Meeting of Society of Industrial Microbiology and Biotechnology, Boulder, Colorado, 2017.
  9. Flores, A.<sup>g\*</sup>, Zeynep Ayla, E.<sup>u</sup>, Nielsen, D., **Wang, X.** Engineering a synthetic co-culture system for enhanced conversion of lignocellulose-derived sugars to bioproducts. Metabolic Engineering Summit, Beijing, China, 2017. (**Andrew Flores won a travel grant**)
  10. Flores, A.<sup>g\*</sup>, Zeynep Ayla, E.<sup>u</sup>, Nielsen, D., **Wang, X.** Engineering a synthetic co-culture system for enhanced co-utilization of lignocellulose-derived sugar mixtures. The annual meeting of ASM AZ-NV Branch, Tucson, Arizona, 2017.
  11. Kurgan, L.<sup>u\*</sup>, Kurgan G.<sup>g</sup>, **Wang, X.** Engineering *Lactobacillus plantarum* for natural antimicrobial production to enhance food safety. The annual meeting of ASM AZ-NV Branch, Tucson, Arizona, 2017.
  12. Kurgan, G.<sup>g\*</sup>, Nieves, L., Kurgan, L.<sup>u</sup>, Xiao, J.<sup>u</sup>, Yesenia-Rodriguez, Y.<sup>u</sup>, Retallack, B.<sup>u</sup>, Schneider, A.<sup>u</sup>, **Wang, X.** Characterization of export mechanism and allosteric regulation to enhance malate production in *Escherichia coli*. The annual meeting of ASM AZ-NV Branch, Tucson, Arizona, 2017. (**Gavin Kurgan won the 'Best Poster Presentation' in Microbial Physiology Section**)
  13. Flores, A.<sup>g\*</sup>, Nielsen, D., **Wang, X.** Engineering a co-culture system for enhanced Lignocellulose-derived sugar mixture utilization. The annual meeting of ASM AZ-NV Branch, Tempe, Arizona, 2016.

14. Schneider, A.<sup>u\*</sup>; Kurgan, G.<sup>g</sup>, Kurgan, L.<sup>u</sup>, Yesenia-Rodriguez, Y.<sup>u</sup>, Xiao, J.<sup>u</sup>, **Wang, X.** Investigation of lactate export in *Escherichia coli*. The annual meeting of ASM AZ-NV Branch, Tempe, Arizona, 2016.
15. Kurgan, G.<sup>g\*</sup>, Rodriguez, Y.<sup>u</sup>, Panyon, L., Pacheco, E.<sup>u</sup>, Nieves, L., **Wang, X.** Small multidrug resistance transporters enhance furfural tolerance. The annual meeting of ASM AZ-NV Branch, Tempe, Arizona, 2016. (**Gavin Kurgan won the 'Best Poster Presentation' in Bioengineering Section**)
16. Kurgan, L.<sup>u\*</sup>, Kurgan, G.<sup>g</sup>, Rodriguez, Y.<sup>u</sup>, Nieves, L., **Wang, X.** Characterization of a synergistic network of malate exporters in *Escherichia coli*. The annual meeting of ASM AZ-NV Branch, Tempe, Arizona, 2016.

#### [Poster presentation prior to ASU]

17. **Wang, X.**<sup>\*</sup>, Yomano, L. P., Shanmugam, K. T. and Ingram, L. O. Expression of native furfural oxidoreductases can be used to increase furfural tolerance in ethanologenic *Escherichia coli* strain LY180. 33rd Symposium on Biotechnology for Fuels and Chemicals, 2011.
18. **Wang, X.**<sup>\*</sup>, Ren, J., Zhou, Y., Hammer, N. D. and Chapman, M. R. Structural determinants of CsgA amyloid formation in *Escherichia coli*. 4th Annual Midwest Conference on Protein Folding, Assembly and Molecular Motions, 2008.
19. **Wang, X.**<sup>\*</sup>, Smith, D.R., Jones, J.W., Ren, J. and Chapman, M.R. Structural determinants of CsgA amyloid formation in *Escherichia coli*. Protein Misfolding Diseases in Keystone Symposia, 2006.
20. **Wang, X.**<sup>\*</sup>, Jones, J.W. and Chapman, M.R. The structural determinants of CsgA to form amyloid fiber in E.coli. International Union of the Microbiological Societies (IUMS), 2005.
21. **Wang, X.**<sup>\*</sup>, Jones, J.W. and Chapman, M.R. The structural determinants and in vitro polymerization of the amyloid fiber-forming protein CsgA. Midwest Microbial Pathogenesis Meeting, 2004.

## **PATENTS**

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#### [Patents at ASU]

1. Sievert, C.<sup>p</sup>, Loeffler, T.<sup>u</sup>, Nieves, L.M., Panyon, L.A., Morris, L.<sup>u</sup>, Cartwright, R.A., **Wang, X.** Modified microorganisms for chemical production: genetic manipulations to increase xylose utilization. US Patent number: 10,125,178 (Granted 2018)

#### [Patents prior to ASU]

2. Geddes, R., **Wang, X.**, Yomano, L.P., Miller, E.N., Zheng, H., Shanmugam K. T., Ingram, L.O. Use of polyamines and polyamine transporters to provide furfural tolerance. U.S Provisional Patent application 2014, PCT/US2014/070795.
3. **Wang, X.**, Yomano, L.P., Lee, J.Y., Sean, S.Y., Zheng, H., Mullinnix, M.T., Shanmugam K. T., Ingram, L.O. Combining genetic traits for furfural tolerance. PCT/US2013/069987; WO/2014/078472
4. **Wang, X.**, Miller, E.N., Yomano, L.P. Shanmugam K.T., Ingram, L.O. Over-expression of a putative oxidoreductase (UcpA) for increasing furfural or 5-hydroxymethylfurfural tolerance. US 61/505,684; WO/2013/009679
5. Miller, E., **Wang, X.**, Yomano, L., Zhang, X., Shanmugam, K.T., Ingram, L.O.

- Overexpression of NADH-dependent oxidoreductase (FucO) for increasing furfural or 5-hydroxymethylfurfural tolerance. US 61/470,642; WO/2012/135420
6. Zhang, X., **Wang, X.**, Shanmugam, K.T., Ingram, L.O. L-malate production by metabolically engineered *Escherichia coli*. US 61/379,077; WO/2012/031079

## **INVITED SEMINARS**

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2017. Annual Meeting of Society for Industrial Microbiology and Biotechnology, Denver, CO
2017. Annual Meeting of ASM AZ-NV Regional Conference, Tucson, AZ
2017. Glendale Community College, Glendale, AZ
2014. Arizona State University, Tempe, AZ
2011. Annual Meeting of Society for Industrial Microbiology and Biotechnology, New Orleans, LA

## **PAST AND CURRENT MAJOR FUNDING**

### **Active Projects**

**NSF-MCB: CAREER:** Systems-Level Identification and Characterization of Cellular Export and Efflux Systems for Renewable Chemicals

Duration: 02/2020-01/2025

Total: \$712,632

Role: PI

**DOE EERE:** Multi-pronged approach to improving carbon utilization by cyanobacterial cultures

Duration: 12/2018-11/2021

Total: \$2,500,000

Recognition: ~\$625,000

Role: Co-PI

**NSF-IRES:** Track I: Exploring Biobased Plastics and Materials through Collaborative Research in Japan.

Duration: 9/1/2020-8/31/2023

Total: \$ 299,913.00

Role: Co-PI

### **Completed Projects**

**NSF CBET SusChEM:** Enhancing tolerance and performance of a renewable aromatic biorefinery

Duration: 08/2015-08/2019

Total: \$350,000

Recognition: \$140,126

Role: Co-PI

**DOE BETO:** Direct photosynthetic production of biodiesel by growth-decoupled cyanobacteria

Duration: 09/2016-11/2018  
Total: \$1,738,210  
Recognition: ~\$573,600  
Role: Co-PI

## **TEACHING**

### **Lead Faculty at Following Arizona State University Courses**

Fall: 2015-2019 (20-30 students)	BCH494/598, BIO494/598, BME494/598, MBB494 and MCB598: Bioenergy and Microbial Biotechnology (3 credits) [Developed as a new elective class focusing on microbial biotechnology]
Fall: 2015 (called MIC591), 2016, 2017, 2019 (5-10 students)	MIC501: Foundations of Microbiology (3 credits) [Co-organizer for this required foundation class for Microbiology PhD students]
Spring: 2016-2019 (120-190 students)	MIC220&Honors: Biology of Microorganism (3 credits) [Lecture-based class designed for students majoring in the life sciences]
Spring: 2014 (35 students)	MIC 360: Bacterial Physiology [Lecture-based class incorporated with active learning modules designed for students in microbiology major]
Fall: 2013 (115 students)	MIC 205: Microbiology [Lecture-based class designed for students in non-microbiology major]
Every semester since 2014 Spring	BIO492/BIO495/MIC495/BIO499/MBB495/MBB492/MBB493 Supervision of undergrad research including honors thesis research

### **Guest Faculty at Following Arizona State University Courses**

Spring: 2014-2019 Fall: 2014-2017	MIC401: Microbiology Research Paper [Serve as a proposal reader for students]
Fall: 2014, 2017	BIO189: Life Sciences Career Paths [5 guest lectures for each time to introduce microbial biotech field]
Spring: 2015, 2016, 2018	MIC470: Bacterial Diversity and Systematics [Guest lectures for fermentative metabolism and directed evolution]
Spring: 2017	CHE494/598: Microbial Bioprocess Engineering [Guest lecture about biomass conversion]

## **MENTORING EXPERIENCE**

### **Postdoctoral Researcher Mentor**

[Current trainees]



1. Dr. Steven Holland, 2017 to present
2. Dr. Christian Sievert (co-mentored with Dr. Reed Cartwright at SOLS), 2014 to 2016, ASU

### **Ph.D and M.S. Student Advisor**

#### **[Current trainees]**

1. Moses Onyeabor (Ph. D. student in Microbiology), 2019 Spring to present, ASU
2. Rodrigo Martinez (Ph. D. student in Microbiology), 2017 Fall to present, ASU
3. Andrew Flores (Ph. D. student in Chemical Engineering, co-mentored with Dr. David Nielsen from Chemical Engineering at ASU), 2015 Fall to present, ASU

#### **[Past trainees]**

4. Gavin Kurgan (Ph. D. student in Biological Design), 2014 Fall to 2018 Summer, ASU
5. John Hagstrom (Master student in Chemical Engineering, co-mentored with Dr. David Nielsen, ASU), 2016 Spring to 2017 Fall

### **Undergraduate researcher advisor**

#### **[Current trainees]**

1. Hyun Choi, ASU, 2019 Spring to present
2. Edward Nolan, ASU, 2018 Spring to present
3. Rebecca Condruti, ASU, 2017 Fall to present

#### **[Past trainees]**

4. Matthew Dufault, ASU, 2017 Fall to 2019 Spring
5. Aidan Schneider, ASU, 2015 Fall to 2019 Spring
6. Eric Taylor, ASU, 2016 Fall to 2018 Spring
7. Robert Mann, ASU, 2016 Fall to 2018 Spring
8. E. Zeynep Ayla, ASU, 2016 Spring to 2017 Summer
9. Yesenia Rodriguez-Sanchez, ASU, 2015 Summer to 2017 Fall
10. Logan Kurgan, ASU, 2015 Summer to 2017 Summer
11. Nathan Palmer (co-mentored with Dr. Reed Cartwright from SOLS), ASU, 2015 Spring to 2016 Fall
12. Brittany Retallack, ASU, 2015 Spring to 2016 Spring
13. Andrew Kaye (co-mentored with Dr. David Nielsen from Chemical Engineering), ASU, 2015 Fall
14. Alex Krupa, ASU, 2015 Spring
15. Junpei Xiao, ASU, 2014 Fall to 2016 Fall
16. Steven Llewellyn, ASU, 2014 Spring to 2015 Spring
17. Brett Johnson, ASU, 2014 Summer to 2014 Fall
18. Eric Pacheco, ASU, 2014 Spring to 2015 Spring
19. Chandler Morris, ASU, 2014 Spring to 2015 Summer
20. Taylor Loeffler, ASU, 2014 Spring to 2015 Summer

#### **Undergraduates from local community colleges as an outreach activity**

21. Jessica D. Amaya Castro, Mesa Community College, 2015 Summer to 2016 Summer
22. Thomas Billings, Scottsdale Community College, 2016 Summer to 2017 Spring

#### **Undergraduate students prior to ASU**

1. James Lee, Undergraduate research, University of Florida 2010-2013
2. Juan-Jie Ren, Honors Thesis in University of Michigan, 2006-2007

## **SERVICE ON DISSERTATION, THESIS & COMPREHENSIVE EXAM COMMITTEE**

### **Service for PhD students**

1. Gavin Kurgan (PhD student, Biological Design, Dissertation Committee Chair, 2014 to 2018)
2. Andrew Flores (PhD student, Chemical Engineering, Comprehensive Exam Committee and Dissertation Committee Co-Chair, 2015 to present)
3. Rodrigo Martinez (PhD student, Microbiology, Comprehensive Exam Committee Member and Dissertation Committee Chair, 2018 to present)
4. Mark Reynolds (PhD student, Microbiology, Comprehensive Exam Committee Chair and Dissertation Committee Member, 2017 to present)
5. Christophe Ashe (PhD student, Molecular and Cellular Biology, Comprehensive Exam Committee and Dissertation Committee Member, 2016 to present)
6. Wesley Swenson (PhD student, Microbiology, Comprehensive Exam Committee and Dissertation Committee Member, 2016 to present)
7. Zachary Dookeran (PhD student, Chemical Engineering, Comprehensive Exam Committee and Dissertation Committee Member, 2017 to present)
8. Michael Machas (PhD student, Chemical Engineering, Comprehensive Exam Committee and Dissertation Committee Member, 2017 to present)
9. Vicki Moore (PhD student, Biology, Dissertation Committee Member, 2015 to 2017)
10. Brian Thompson (PhD student, Chemical Engineering, Dissertation Committee Member, 2016 to 2017)
11. Kyle Staggs (PhD student, Chemical Engineering, Dissertation Committee Member, 2015 to 2017)
12. Shawn Pugh (PhD student, Chemical Engineering, Dissertation Committee Member, 2015 to 2016)
13. Matt Bellefleur (PhD student, Microbiology, Comprehensive Exam Committee and Dissertation Committee Member, 2014 to 2018)

### **Service for MS students**

1. John Hagstrom (Chemical Engineering, Master Thesis Committee Co-Chair, 2016 to 2017)
2. Alexandria M. Layton (Biochemistry, Master Thesis Committee Member, 2018 to 2019)
3. Zenan Tao (Microbiology, Master Thesis Committee Member, 2018)
4. Zeni Ramirez (Microbiology, Master Thesis Committee Member, 2017 to 2018)
5. Karthika Madathil (Chemical Engineering, Master Thesis Committee Member, 2016 to 2017)
6. Daniel Herschel (Chemical Engineering, Master Thesis Committee Member, 2015 to 2016)
7. Mellecha Blake (Microbiology, Master Thesis Committee Member, 2015 to 2016)

8. Anirudh Vasudevan (Chemical Engineering, Master Thesis Committee Member, 2014 Fall)

### **Service for undergraduate students**

1. Aidan Schneider (Undergrad Honors Thesis Committee Chair, 2015-2018)
2. Matthew Dufault (Undergrad Honors Thesis Committee Chair, 2017-2019)
3. E. Zeynep Ayla (Undergrad Honors Thesis Committee Co-Chair, 2016-2017)
4. Phoebe Newell (Undergrad Honors Thesis Committee Member, 2018-2019)
5. Nicolas Call (Undergrad Honors Thesis Committee Member, 2019)
6. Nathan Palmer (Undergrad Honors Thesis Committee Member, 2015-2016)
7. Jimmy Xu (Undergrad Honors Thesis Committee Member, 2017 to 2018)
8. Divya Mahendra (Undergrad Honors Thesis Committee Member, 2013 to 2014)

### **UNIVERSITY SERVICE**

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- 2018-present, Co-Director, Microbiology PhD and MS programs
- 2015-present, Member, SOLS Safety Committee
- 2015-2017, 2019-present, Co-Organizer for the core course (MIC 501 Foundations of Microbiology) for Microbiology Graduate Program
- 2016-2017, Main organizer for the ‘ASU Frontiers of Modern Microbiology’ seminar series
- 2016-2017, Member, Search Committee for a bioenergy faculty member in Chemical Engineering at ASU
- 2014-2015, Member, Search Committee for a microbial genomics faculty member in SOLS
- 2013-2014, Member, Search Committee for a microbial genomics faculty member in SOLS

### **PROFESSIONAL SERVICES**

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- NSF Panelist
- Reviewer: *mBio*, *PLOS ONE*, *Applied Microbiology and Biotechnology*, *ACS Med Chem letter*, *BMC Microbiology*, *ACS Synthetic Biology*, *Process Biochemistry*, *Mol Biotech*, *Microbial Drug Resistance*, and *Scientific Reports*
- Poster judge: Multiple scientific conferences such as Annual Meetings of SIMB (2017) and ASM AZ/NV branch (2016 and 2017)
- Conference session chair: 2015 Annual meeting of the Society for Industrial Microbiology and Biotechnology; 2016 ASM AZ/NV annual meeting
- Outreach activities:
  - ASU Open Door outreach event every year since 2015
  - Training high school student researchers in 2015-2016 through the outreach programs such as ‘the Fulton Summer Academy-High School Summer Research’ organized by Ira A. Fulton Schools of Engineering and the Science and Engineering Experience (SCENE)

- Participating in Science Olympiad 2017-2018 as well as the Phoenix Zoo Earth Day Event 2018

## **HONORS AND AWARDS**

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- NSF CAREER Award, 2020
- Rackham Predoctoral Fellowship, 2008
- Keystone Symposia Scholarship, 2006
- The President Award of Chinese Academy of Sciences, 2003
- Liu Yongling Award of Chinese Academy of Sciences, 2002
- Excellent Graduate Student Scholarship of Chinese Academy of Sciences, 2001