

Curriculum Vitae (C. Xiao)



Chuan Xiao, PhD

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Education

2005-2008	Postdoc	Department of Biological Sciences, Purdue University, West Lafayette, IN
1998-2005	Ph.D.	Department of Biological Sciences, Purdue University, West Lafayette, IN <u>Program</u> : Biochemistry and Molecular Biology, GPA: 3.9 out of 4.0
1995-1998	M.S.	Department of Biochemistry, Fudan University, Shanghai, P.R.China <u>Major</u> : Biochemistry, GPA: 3.6 out of 4.0
1991-1995	B.S.	Department of Biochemistry, Fudan University, Shanghai, P.R. China <u>Major</u> : Biochemistry, GPA: 3.5 out of 4.0 <u>Minor</u> : Electronics and Information system, GPA: 3.9 out of 4.0

Professional Experiences

2021-	Professor; Department of Chemistry and Biochemistry, University of Texas at El Paso, El Paso, TX. Current Major Research Projects: Using structural techniques such as X-ray crystallography and cryo-EM to study (1) Giant marine viruses (CroV and AaV); (2) A virophage integrase; (3) Mammalian circadian components; (4) GAM1, a viral protein globally inhibits cellular SUMOylation; (5) Drugs for emerging enteroviruses; and (6) Developing RIVEM2 for structural analyses. Current funding: PI of one NIH-R01 grant and one Private Foundation Grant; co-investigator of one NIH U54 grant; co-PI of one NSF MRI grant; local PIs for three multiple PI NIH U24 cryo-EM consortium grants. <u>Accomplishments</u> : 1 publication
2015-2021	Associate Professor; Department of Chemistry and Biochemistry, University of Texas at El Paso, El Paso, TX. <u>Accomplishments</u> : finished one NIH SC3 grant as PI and one NSF-MRI grant as co-PI; PI of one NIH-R01 grant; co-investigator of one NIH U54 grant; co-PI of one NSF MRI grant; local PIs for three multiple PI NIH U24 cryo-EM consortium grants. 16 publications (9 corresponding author, 6 with students including one with many undergraduates); 7 conference proceedings; two cryo-EM reconstruction of giant marine viruses CroV and AaV to EMDB; currently supervise research of three Ph.D. students, one Master student and 10 undergraduate students; have supervised one post-doctoral researcher, 8 graduate students, 59 undergraduate students; currently serving or have served on committee of 9 M.S. students and 11 Ph.D. students.
2008-2014	Assistant Professor; Department of Chemistry, University of Texas at El Paso, El Paso, TX. <u>Accomplishments</u> : 12 publications; 1 conference proceeding; PI of one, co-PIs of two, and collaborators of two federal grants; PI of four internal grants; graduated one Ph.D. student, two M.S. students; have supervised research of one unfinished Ph.D.

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student (due to severe sickness of tumor), two M.S. students (non-thesis), 30 undergraduate students, and 9 high-school students; serving or have served on committee of 11 M.S. students and 10 Ph.D. students.

- 2005-2008 Post-Doctoral Research Associate; Department of Biological Sciences, Purdue University, West Lafayette, IN.
Projects: “Cryo-EM reconstruction of the giant Mimivirus”, “High resolution cryo-EM reconstruction of Sindbis virus deglycosylation mutants”, and “Structure studies of the interaction between Coxsackievirus A21(CVA21) and its receptor DAF and ICAM-1”.
Mentor: Michael Rossmann
Accomplishments: 5 publications; one cryo-EM reconstruction of giant Mimivirus to EMDB; supervised research of two undergraduate students.
- 1998-2005 Graduate Student Researcher for Ph.D. degree; Department of Biological Sciences, Purdue University, West Lafayette, IN.
Dissertation Title: “Interaction between three picornaviruses and their common receptor ICAM-1”.
Advisor: Michael G. Rossmann
Accomplishments: 5 publications; three X-ray structures of common cold virus CVA21 submitted to PDB and three cryo-EM reconstruction of common cold viruses (CVA21, HRV16 and HRV14) with their receptor ICAM-1 to EMDB; One published program RIVEM and about 10 different cryo-EM programs for the group; webmaster of the group.
- 1995-1998 Graduate Student Researcher for M.S. degree; State Satellite Laboratory of Rice Genome Project, Fudan University, Shanghai, China.
Thesis Title: “A novel calmodulin-like protein gene in rice which has an unusual prolonged C-terminal sequence carrying a putative prenylation site”.
Mentor: Kaimin Cao
Accomplishments: 2 publications; 2 complete cDNA sequences (GAPDH and a novel Calmodulin-like protein), 1 complete genomic sequence (a novel Calmodulin-like protein); and 200 ESTs of Rice.
- 1996-1998 Computer and Network System Administrator; State Key Laboratory of Genetic Engineering, Fudan University, Shanghai, China.
Director: Shunde Wang
Accomplishments: Technique leader in the construction of campus network of three buildings of the School of Life Sciences; System administrator of computer servers; taught graduate level class about usage of biological software.
- 1992-1995 Undergraduate Research for B.S. Degree; Satellite Laboratory of Rice Genome Project, Fudan University, Shanghai, China.
Thesis Title: “Sequencing of the cDNA Encoding the 16 kDa Subunit of V-ATPase from Rice and Homology Searching”.
Mentor: Kaimin Cao
Accomplishments: help to build the new lab; 1 complete cDNA sequence (16kDa subunit C of V-ATPase) and about 100 ESTs of Rice; established internet submission of EST into GenBank; repair and maintain the lab instruments.

Professional Affiliation

- 2021- lifetime member of Society of Chinese Bioscientists in America/Virology Division (ACVA)
2020- associate editor, Journal of Medical Virology
2017- member, UTEP student chapter advisor, American Society for Biochemistry and Molecular Biology (ASBMB)
2016- member, Society for Research of Biological Rhythms (SRBR)
2015- review editor in Virology, Frontiers in Microbiology

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- 2010-2013 member of American Chemical Society (ACS)
2009-2011 member and admission committee of Sigma Xi,
2002- member of Microscopy Society of America (MSA)
2008-2012 member of American Association for the Advancement of Science (AAAS)
2001- associated (to 2008) and then lifetime full member of American Society for Virology (ASV)

Honors and Scholarships

- 2022 Outstanding Contributions to Teaching and Learning at UTEP, UTEP Academy of Distinguished Teachers, El Paso, TX, USA
2020 Texas Regents' Outstanding Teaching Award, UT System, Austin, TX, USA.
2019 Mentoring Award for Excellence in Student Research Mentoring, College of Science and BUILDing SCHOLARS, UTEP, El Paso, TX, USA.
2018 One of the five university level nominees to Texas Regents' Outstanding Teaching Award, UTEP, El Paso, TX, USA.
2016 May Graduating Undergraduate Student Choice Award for Outstanding Teaching in College of Science, College of Science, UTEP, El Paso, TX, USA.
2015 December Graduating Undergraduate Student Choice Award for Outstanding Teaching in Department of Chemistry, College of Science, UTEP, El Paso, TX, USA.
2015 May Graduating Undergraduate Student Choice Award for Outstanding Teaching in Department of Chemistry, College of Science, UTEP, El Paso, TX, USA.
2008 Postdoctoral travel award, 27th Annual Meeting of American Society for Virology, Ithaca, NY, USA.
2007 One of three selected talks from poster session, Workshop on Advanced Topics in EM Structure Determination, San Diego, CA, USA.
2006 Committee Appreciation Poster Award, 3rd International Conference on Structural Analysis of Supramolecular Assemblies by Hybrid Methods, Lake Tahoe, CA, USA.
2002 MSA Presidential Student Award of Microscopy & Microanalysis, Quebec City, Canada.
2001 Graduate student travel grant award, 20th Annual Meeting of American Society for Virology, Madison, WI, USA.
2000 Second Place Award, Poster Session of the 6th Biophysics and Cellular Biology Symposium, Purdue University, West Lafayette, IN, USA.
2000 Highest Score, Doctoral Qualifying Examination, Biochemistry and Molecular Biology Program, Purdue University, West Lafayette, IN, USA.
1997 The only second year master's degree student earning Dongs' Orient Scholarship, First rank scholarship, Fudan University, Shanghai, China.
1996 Highest scholarship of first year master's degree student, GuangHua Scholarship, Fudan University, Shanghai, China.
1995 Selected one of five excellent graduates in a forty-student class, Undergraduate, Fudan University, Shanghai, China
1990-1995 Third rank scholarship as freshman, Second Rank Scholarship as Sophomore and Senior student, Undergraduate, Fudan University, Shanghai, China.

Publications

(* = post-doctoral researcher from my group; * = graduate student from my group; * = undergraduate student from my group; § = as corresponding or co-corresponding author)

My citation sites:

[ORCID](#), [Research ID](#), [GOOGLE Scholar](#), [My NCBI](#)
[My Publication on My Webpage](#), [My Animation \(Movies\) Gallery](#)

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Published Manuscripts:

Recent Invited book chapter from Total of 2:

1. Xian, Y.* , Xiao, C. § (2020) "Current capsid assembly models of icosahedral Nucleocytoviricota viruses." *Advances in Virus Research*, 108: 275-313, [ePublished Online with doi.org/10.1016/bs.aivir.2020.09.006](#).

Recent Invited Review Articles from Total of 5:

1. Xiao, C. § (2021). "In Memory of Michael G. Rossmann: A Wise Man with a Forever Young Heart." *Viruses*, 13(7), 1305. [DOI: 10.3390/v13071305](#).
2. Xiao, C. §, Li, X., Liu, S., Sang, Y., Gao, S.J, and F. Gao (2020). "HIV-1 did not contribute to the 2019-nCoV genome." *Emerg Microbes Infect* 9(1): 378-381. [PubMed PMID: 32056509](#); [PMCID: PMC7033698](#).
3. Xian, Y.* , Xiao, C. § (2020) "The Structure of ASFV Advances the Fight Against the Disease" *Trends in Biochemical Sciences*, 45(4):276-278. [PubMed PMID: 31430698](#); [PMCID: PMC6817408](#).
4. Xiao, C. §, Tong, L. (2019) "Michael G. Rossmann (1930-2019)." *Structure*, 27: 1347-49.

Recent Peer Reviewed Journal Articles Selected from Total of 33 :

1. Xian, Y.* , Avila, R., Pant, A., Yang, Z., Xiao, C. §, (2020) "The role of tape measure protein in giant virus capsid assembly." *Viral. Immunol.*, [ePublished Online with doi:10.1089/vim.2020.0038](#). [PubMed PMID: 33074779](#).
2. Gann, E.R., Xian, Y.* , Abraham, P.E., Hettich, R.L., Reynolds, T.B., Xiao, C. §, and Steven W. Wilhelm, S.W. (2020) "Structural and proteomic studies of the *Aureococcus anophagefferens* Virus demonstrate a global distribution of virus encoded carbohydrate processing" *Frontiers Microbiology*, [ePublish Online](#). [PubMed PMID: 33013751](#); [PMCID: PMC7507832](#).
3. Li. X., Giorgi, E.E., Marichannegowda, M.H., Foley, B., Xiao, C., Kong, X.-P., Chen, Y., S. Gnanakaran, S., Korber, B., and Gao, F. (2020) "Emergence of SARS-CoV-2 through Recombination and Strong Purifying Selection." *Sci. Adv.*, 6(27), eabb9153, [ePublish Online](#). [PubMed PMID: 32937441](#); [PMCID: PMC7458444](#).
4. Xian, Y.* , Moreno, B.* , Miranda, V.* , Vijay, N.* , Nunez, L.C.* , Choi, J.* , Quinones, C.S.* , Rios, P.* , Chauhan, N., Moriel, K.V.* , Ruelas, N.J.* , Castaneda, A.E.* , Rodriguez, R.C.* , Amezaga, B.N.* , Azzam, S.Z.* , Xiao, C. § (2020) "Thermal stability analyses of Human PERIOD-2 C-terminal domain using dynamic light scattering and circular dichroism." *PLoS One*, 15(4): e0221180. [PubMed PMID: 32320392](#); [PMCID: PMC7176140](#).
5. Ray, S.* , Reyes, S.V., Xiao, C., and Sun, J. (2019). "Effects of membrane lipid composition on EsxA membrane insertion: A dual play of fluidity and charge." *Tuberculosis*, 118:101854. [PubMed PMID: 31430698](#); [PMCID: PMC6817408](#).
6. Xian, Y.* , Karki, C.B.; Silva, S.M.; Li, L.; Xiao, C. § (2019) "The Roles of Electrostatic Interactions in Capsid Assembly Mechanisms of Giant Viruses." *Int. J. Mol. Sci.*, 20(8):1876. [PMID: 30995716](#); [PMCID: PMC6514965](#); [Cover of the Journal](#).
7. Martin, R. M., Moniruzzaman, M., Mucci, N. C., Willis, A., Woodhouse, J. N., Xian, Y.* , Xiao, C., Brussaard, C. P. D., Wilhelm, S. W. (2019). "Cylindrospermopsis raciborskii Virus and host: genomic characterization and ecological relevance", *Environmental Microbiology* 21(6): 1942-56. [PMID: 30251319](#).
8. Huang, X., Ding, Y., Xiao, C., Qian, W., and C.Q. Li (2018). "Hybrid algorithm based on radial symmetry and weighted least-square ellipse fitting for three-dimensional nanometer particle localization." *Journal of Biomedical Optics* 23(3). [doi:10.1117/1.JBO.23.3.036501](#).
9. Xiao, C. §, Fischer, M. G., Bolotaulo, D. M.* , Ulloa-Rondeau, N.* , Avila, G. A.* , Suttle, C. A. (2017). "Cryo-EM reconstruction of the *Cafeteria roenbergensis* virus capsid suggests novel assembly pathway for giant viruses." *Sci Rep* 7(1): 5484. [PMID: 28710447](#); [PMCID: PMC5511168](#); Podcast on [TWiV: This Week in Virology](#).

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- Huang, X., Li, C., **Xiao, C.**, Sun, W., Qian, W. (2017) "A fully automated multiscale kernel graph cuts-based particle localization scheme for temporal focusing two-photon microscopy." *Proc SPIE Int Soc Opt Eng*, 10137. [PubMed PMID: 29276328](#); [PMCID: PMC5737779](#).
- Dou, M., Lopez, J., Rios, M., Garcia, O., **Xiao, C.**, Eastman, M., Li, X. (2016) "A fully battery-powered inexpensive spectrophotometric system for high-sensitivity point-of-care analysis on a microfluidic chip" *Analyst*. 141(12):3898-903. [PubMed PMID: 27143408](#); [PMCID: PMC4899221](#).
- Liu, Y., Sheng, J., Baggen, J., Meng, G., **Xiao, C.**, Thibaut, H. J., van Kuppeveld, F., Rossmann, M. G. (2015). "Sialic acid-dependent cell entry of human enterovirus D68." *Nat Commun*, 6:8865. [PMID: 26563423](#); [PMCID: PMC4660200](#).

Conference Proceeding Articles Selected from a Total of 12:

- Adame, S. *, Sanchez, S. *, Lopez, O. *, Madariaga, A. *, Moreno, B. *, Xian, Y. *, **Xiao, C.** (2022). "Optimizing Co-Expression of Human Circadian Protein Complex CLOCK/BMAL1" *The FASEB JOURNAL* 36 (S1), R526. [doi:10.1096/fasebj.2022.36.S1.0R526](#)
- Sanchez, S. V.*, Madej, A.*, Moreno, B.*, Xian, Y.*, Yoo, S.H., Zhen, Z., **Xiao, C.** (2020) "Expression and Purification of Human Circadian Protein hROR γ for Structural and Functional Studies" *The FASEB Journal* 34 (S1), 1-1 (April 15, 2020) [doi:10.1096/fasebj.2020.34.s1.00687](#).
- Moriel, K. *, Xi, D. *, Sarabia, A. *, Chauhan, N., Ray, S. *, **Xiao, C.** (2018) "Expression and Purification of human Neuronal PAS domain protein 2 (hNPAS2)" *The FASEB Journal* 34 (1_supplement), 526-15 (April 1, 2018) [doi:10.1096/fasebj.2018.32.1_supplement.526.15](#).
- Ray, S. *, Fresquez, J. *, Esper, R. *, Clark, J., Corral, G., Xiao, C. (2018) "Teaching Biochemistry based Research Driven Course through Active Learning to Accelerate Student's Adaptation to College Study and Promote Freshman Research" *The FASEB Journal* 32 (1_supplement), 663-41 (April 1, 2018) [doi:10.1096/fasebj.2018.32.1_supplement.663.41](#).
- Moreno, B. *, Li, D. *, Sarabia-Gonzalez, A. *, Rodriguez, J. *, Choi, J. *, Ray, S. *, Xiao, C. (2018) "Expression and Purification of human Neuronal PAS domain protein 2 (hNPAS2)" *The FASEB Journal* 34 (1_supplement), 794-11 (April 1, 2018) [doi:10.1096/fasebj.2018.32.1_supplement.794.11](#).
- Wang, Y., Ding, Y., Ray, S. *, Paez, A., **Xiao, C.**, Li, C. (2016). "Two-photon flow cytometry with laser scanning Bessel beams." *Proc. SPIE. Biophotonics and Immune Responses XI, 97090F* (March 21, 2016). [doi:10.1117/12.2208549](#).
- Sun, W.Q., Huang, X., Li, C.Q., **Xiao, C.**, and Qian, W. (2016). "A novel Kalman filter based video image processing scheme for two-photon fluorescence microscopy." *Proc. SPIE. Medical Imaging 2016-Biomedical Applications in Molecular, Structural, and Functional Imaging 9788*. (March 01-03, 2016). [doi:10.1117/12.2216129](#).

Recent Database Contributions from a Total of 12:

- Cryo-EM map of Aureococcus anophagefferens Virus (AaV) (EMDB, EMD-22339, September, 2020)
- Protein Circular Dichroism Data Bank at (PCDDDB, [CD0006240000 - CD0006242000](#), April, 2020)
- Cryo-EM reconstruction of the giant marine Cafeteria roenbergensis virus (EMDB, [EMD-8748](#), May, 2017)

Scientific Presentations

Recent Invited Presentations Selected from a Total of 32:

- Xiao, C.**, University of Kansas Medical Center, "Structural studies of giant icosahedral eukaryotic dsDNA viruses," Department of Microbiology, Molecular Genetics & Immunology, Kansas City, KS. (November 10, 2022).

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2. **Xiao, C.**, Integrative Structural Biology - X-ray and CryoEM Techniques, "Structural Studies of Giant Icosahedral Eukaryotic dsDNA viruses," NIH Stanford-SLAC cryoEM Center (S2C2), Online Due to COVID Policy. (September 26, 2022).
3. **Xiao, C.**, Plenary talk presented at: 43rd Senior Technical Meeting, "The Magic of Cryo-EM: from Tiny to Gigantic and from Blobology to Atomic", American Chemical Society (ACS) Puerto Rico Section, Puerto Rico, Online Virtual. (December 1, 2020).
4. **Xiao, C.**, Departmental Promotion Seminar, "[Viruses: Evolution Friend or Foe?](#)", Department of Chemistry and Biochemistry, UTEP, El Paso, TX. (Sept. 18, 2020).
5. **Xiao, C.**, Departmental seminar, "Jelly-roll spiraling all the way", Department of Chemistry and Biochemistry, New Mexico State University, Las Cruces, NM. (Oct. 27, 2017)
6. **Xiao, C.**, Fralin Life Science Institute, Virginia Tech University, "The Magic of Cryo-EM: from Tiny to Gigantic", Department of Biological Science, Virginia Tech University, Blacksburg, VA. (Aug. 28, 2015)
7. **Xiao, C.**, Seminar for Program in Emerging Infectious Diseases "Viruses: Evolution Friend or Foe?" Duke-NUS Graduate Medical School, Singapore (June 16, 2014)

Recent International and National Conference Presentations Selected from a Total of 72:

(* = post-doctoral researcher from my group; * = graduate student from my group; * = undergraduate student from my group)

1. **Xiao, C.**, Xian, Y., Avila, R., Pant, A., Yang, Z., Talk presented at: American Society for Virology 41st Annual Meeting, "Tape Measure Protein in Spiral Assembly of Icosahedral Nucleocytovirus Capsid", American Society for Virology, Madison, WI, USA. (July 16-20, 2022).
2. **Xiao, C.**, Talk presented at: FASEB SRC of Virus Structure and Assembly, "Capsid assembly of giant icosahedral eukaryotic dsDNA viruses", Federation of American Societies for Experimental Biology, Southbridge, MA, USA. (June 26-30, 2022)
3. **Xiao, C.**, Recorded Virtual Talk presented at: M&M (Microscopy and Microanalysis) 2021 Virtual Meeting "Structural Studies of Giant Viruses by Michael Rossmann," Microscopy Society of America, Virtual, USA. (August 1-5, 2021).
4. Dong, R.*, Madariaga, A.*, Xian, Y.*, Fischer, M.G., **Xiao, C.** Talk presented at: 10th International Aquatic Virus Workshop, "Monoxenic culture adaptation of Cafeteria roenbergensis for viral infection and purification," Japanese Society of Microbial Ecology and Kyoto University, Online, Japan (June 27- July 1, 2021).
5. **Xiao, C.**, Talk presented at: 43rd Senior Technical Meeting, " The Magic of Cryo-EM: from Tiny to Gigantic," American Chemical Society (ACS) Puerto Rico Section, Puerto Rico, Online Virtual. (December 1, 2020).
6. Rios, P.*, Moreno, B.*, **Xiao, C.**, Poster presented at: SACNAS 2020: Society for Advancement of Chicanos/Hispanics and Native Americans in Science, "Expression and Purification of human Brain and Muscle ARNT-Like 1 Protein (hBMAL1) for Structural and Functional Studies", SACNAS, Online, USA. (October 19 - 24, 2020). Undergraduate Student Poster Presentation Award.
7. Chen, S.*, Moreno, B.*, Moriel, K.*, **Xiao, C.** Virtual poster presented at: American Society for Biochemistry and Molecular Biology 2020 Annual Meeting, "Expression and purification of human Neuronal PAS domain protein 2 (hNPAS2) for structural and functional studies", American Society for Biochemistry and Molecular Biology, Online due to COVID-19, USA. (April 15, 2020). ASBMB Student Travel Awards
8. **Xiao, C.**, Talk presented at: 4th International Ringberg Symposium on Giant Virus Biology, "Michael G. Rossmann (1930.07.30 – 2019.05.14): a forever inquisitive boy walking on the beach searching for smoother pebbles or prettier shells," Max Planck Institute for Medical Research, Heidelberg, Germany, Ringberg Castle, Tegernsee, Germany. (November 17-20, 2019)

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9. Murillo, J. D.* , Ren, S.* , Fresquez, J.* , Quinones, C.* , Moreno, B. * , Ray, S.* , **Xiao, C.**, Poster presented at: ABRCMS 2019: Annual Biomedical Research Conference for Minority Students, American Society for Microbiology, "The Culture and Purification of Cafeteria roenbergensis virus (CroV) for Structural Studies," ABRCMS, Anaheim, CA, USA. (November 13-16, 2019). ABRCMS Student Travel Awards.
10. Xian, Y.* , Karki, C., Silva, S.M., Li, L., **Xiao, C.**, Talk presented at: American Society for Virology 38th Annual Meeting, "Electrostatics-driven capsid assembly and disassembly of giant viruses," American Society for Virology, Minneapolis, MN, USA. (July 20-24, 2019). One of the two ASV David Baltimore Travel Awards.
11. Xian, Y.* , Karki, C., Silva, S.M., Li, L., **Xiao, C.**, Talk presented at: XXVI Biennial Conference on Phage/Virus Assembly, "The roles of electrostatic interactions in capsid assembly mechanisms of giant viruses," Brainerd, MN, USA. (July 14-19, 2019). PVA Student Travel Awards; PVA Best Oral Presentation.
12. **Xiao, C.**, Xian, Y.* , Rodriguez, J. E.* , Gann, E. R., Fischer, M.G., Wilhelm, S. W., Talk presented at: Gordon Research Seminar, Three-Dimensional Electron Microscopy, "Giant Marine Virus Sample Preparation and Data Collection for Cryo-EM," Gordon Research Seminar, Hong Kong, China (June 8, 2019).

Recent Regional or Local Symposium Presentations Selected from a Total of 103:

1. Arevalo-Jimenez, F., Frost, J., Slade, J. D., Stone, P., Suarez-Almazor, M. E., **Xiao, C.**, Panel discussion presented at: 2021 Sol Conference, "Tell Your Tale: The Human Touch in Teaching Awards," UTEP, El Paso, TX, USA. (April 21-23, 2021).
2. Chen, S.* , Moreno, B.* , Moriel, K.* , Ray, S.* , **Xiao, C.**, Virtual poster presented at: 2019 COURI Summer Symposium: Showcasing Undergraduate Researchers and Artists, "Expression and purification of Human Neuronal PAS domain protein 2 (hNPAS2) for structural and functional studies," COURI, COS, UTEP, El Paso, TX, USA. (August 3, 2019). Honorable Mention Award for Poster in Life Sciences.
3. Yang., R.* , Moreno, B.* , Moriel, K.* , Sarabia, A.* , Chauchan, N., Ray, S.* , **Xiao, C.**, Poster presented at: 2018 COURI Summer Symposium: Showcasing Undergraduate Researchers and Artists, "Expression and Purification of Human Neuronal PAS Domain Protein 2 (hNPAS2)," COURI, COS, UTEP, El Paso, TX, USA. (August 4, 2018), COURI Best Poster Presentation in Physical Science.

Research Funding

Extramural:

Ongoing Research Support

NIH/NIGMS/R01GM129525-01A1 Xiao (PI) 06/01/19-04/30/24

Deciphering the Molecular Assembly Mechanism of Giant DNA Viruses

The goal of this project is to study the capsid assembly mechanism of giant DNA viruses by combining structural tools with classic biochemical, molecular dynamic simulation, mathematical modeling, and computational analyses to evaluate the novel assembly model of giant viruses.

Role: PI

Welch Foundation/AH-2126-20220331 Xiao (PI) 06/01/22-05/31/25

Decipher the Biochemistry Folding and Assembly Mysteries of the Most Common Protein Motif Used by Viruses

The goal of this project is to decipher the hidden biochemistry mysteries of how various amino acid sequences can all fold into Jelly-Roll-Fold and then assemble into viral particles.

Role: PI

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NSF/MRI/2018999 Gates (PI) 10/01/20-09/30/23
MRI: Acquisition of High-resolution Visualization Instrumentation to Support Collaborative, Interdisciplinary Research and Education
This acquisition is a high-performance and fully immersive visualization instrument that will advance UTEP's expanding research agenda through data and knowledge visualization, and improving analysis, understanding, discovery, and decision making.

Role: Co-PI

NIH/NIMHD/U54MD007592-26 Kirken (PI) 08/02/19-02/29/24
Border Medical Research Center
The University of Texas at El Paso (UTEP), through support from the Research Centers at Minority Institutions (RCMI) has created the Border Biomedical Research Center (BBRC) to address issues of Hispanic Health Disparities unique to the far West Texas region that we call the Borderplex. When combined with our sister city of Ciudad Juarez, Mexico, we represent the largest binational community in the world, with nearly 3 million people. The overall goal for this application is to develop, grow and sustain the extant infrastructure and programs of the BBRC, as well as to recruit, train, and develop cancer scientists and health practitioners to promote high quality cancer research and to translate meaningful findings back to the community.

Role: Co-investigator

NIH/NIGMS/U24GM116789 Jiang (PI) 06/01/17-05/31/23
Midwest Consortium for High Resolution Cryoelectron Microscopy
The goal is to create a Midwest Consortium for High- Resolution Cryo-electron Microscopy to provide access to high-resolution data collection capability for cryo-EM laboratories without access to such resources.

Role: Local institutional PI

Current Supporting Roles in Other Grants:

2019-2023 NIH/NIGMS/SC1GM132043 (Role: Collaborator; PI: Li)

2019-2024 NIH/NIGMS/2UL1GM118970 (Role: Collaborator; PI: Echevoyen)

Pending:

N/A

Completed:

2018-2021 NSF/CHE/MRI1827875 (Role: Collaborator; PI: Fortier)

2017-2021 NIH/NIGMS/5SC1GM095475 (Role: Collaborator; PI: Sun)

2016-2021 NIH/NIGMS/U24GM116792 (Role: Local institutional PI, PI: Zhou)

2016-2021 NIH/NIGMS/U24GM116787 (Role: Local institutional PI, PI: Chu)

2014-2019 NSF/DBI/1429708 (Role: Co-PI; PI: Li)

2014-2018 NIH/NIGMS/SC3GM109870 (Role: PI)

2012-2013 NSF/XSEDE/TACC computer allocation grant (Role: PI)

2011-2012 NSF/TeraGrid/TACC computer allocation grant (Role: PI)

2009-2012 NSF/MRI/0923437 (Role: Co-PI; PI: Bernal)

2009-2012 Texas/STAR (Role: PI)

Completed Supporting Roles in Other Grants:

2016-2018 Lung Cancer Foundation (Role: Collaborator; PI: Skouta)

2014-2019 NIH/NIMHD/1RL5MD009592-01 (Role: Collaborator; PI: Echevoyen)

2014-2019 NIH/NIMHD/2G12MD007592-21 (Role: Collaborator; PI: Kirken)

2014-2017 NIH/NIAID/1R15AI105823-01A1 (Role: Collaborator; PI: Johnson)

2013-2014 NSF/DRL/1322600 (Role: Collaborator; PI: Hsu)

2011-2016 NIH/NIAIDS/ 5SC1GM095475-03 (Role: Collaborator; PI: Sun)

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Intramural:

Completed:

- 2014-2015 UTEP COS Interdisciplinary Research Pilot Program (Role: PI)
- 2014-2015 UTEP COS Interdisciplinary Research Pilot Program (Role: co-PI; PI: Spencer)
- 2013-2014 UTEP Interdisciplinary Reserch (IDR) program (Role: Co-PI; PI: Li)
- 2013-2014 UTEP COS Interdisciplinary Research Pilot Program (Role: Co-PI, PI: Li)
- 2012-2013 UTEP Interdisciplinary Reserch (IDR) program (Role: PI)
- 2011-2012 UTEP University Research Institute Grant (Role: PI)
- 2008-2009 UTEP University Research Institute Grant (Role: PI)

Teaching

Teaching Experiences

- 2021- Professor, Chemistry – Biochemistry;
Department of Chemistry and Biochemistry, UTEP, El Paso, TX
*Courses: Undergraduate – Biochemistry I (CHEM 3330) and II (CHEM 3332);
Research Driven Courses of General Chemistry Lab (CHEM 1105/1106);
Graduate – Graduate Seminar (CHEM5195/6195); Analysis and Modeling of Biological Structures (CHEM6341/CHEM5341/BINF5341); Chemistry Seminar for Bioinformatics (BINF5111).*
- 2015-2021 Associate Professor, Chemistry – Biochemistry;
Department of Chemistry*, University of Texas at El Paso, El Paso, Texas
*Courses: Undergraduate – Biochemistry I (CHEM 3330) and II (CHEM 3332);
Research Driven Courses of General Chemistry Lab (CHEM 1105/1106);
Graduate – Graduate Seminar (CHEM5195/6195); Analysis and Modeling of Biological Structures (CHEM6341/CHEM5341/BINF5341); Chemistry Seminar for Bioinformatics (BINF5111).*
**In 2018, the name has been officially changed to Department of Chemistry and Biochemistry*
- 2008-2015 Assistant Professor; Chemistry – Biochemistry;
Department of Chemistry, University of Texas at El Paso, El Paso, Texas
*Courses: Undergraduate – Biochemistry I (CHEM 3330) and II (CHEM 3332)
Graduate – Graduate Seminar (CHEM5195/6195); Advanced Biochemistry (CHEM 5331/6331); Analysis and Modeling of Biological Structures (CHEM5341/BINF5341);
Chemistry Seminar for Bioinformatics (BINF5111).*
- 2002 Teaching assistant – Biochemistry
Department of Biochemsitry, Purdue University, West Lafayette, Indiana
Course: Undergraduate – Biochemistry laboratory (BCHM 309).
- 1998 Teaching assistant – Bioinformatics
Institute of Genetics, Fudan University, Shanghai, China
Course: Graduate – Software used in Bioinformatics (one lecture).
- 1997 Teaching assistant – Biochemistry
Course: Undergraduate – Advanced Biochemistry laboratory.

Curriculum Vitae (C. Xiao)

Overview of Teaching Load since Arrival at UTEP in Fall 2008*

Semester	Years	Course	Title	Format	Total Enrollment	Credit
Fall	2016-2018	CHEM 1105	Laboratory for CHEM 1305 (BUILD: Research Driven Course)	Lab	50	1
	2009-2012	CHEM 3330**	Biochem I: Struc & Function	Lecture	1820	3
		CHEM 5369	Contemporary Topics Inorganic Chemistry	Lecture	7	3
		CHEM 6331	Advanced Biochemistry	Lecture	11	3
Spring	2016-2019	CHEM 1106	Laboratory for CHEM 1306 (BUILD: Research Driven Course)	Lab	55	1
	2009-2013-2019	CHEM 3332**¥	Biochem II: Dynam & Bioenerg	Lecture	659	3
		BINF 5111***	Chem. Sem. for Bioinformatics	Seminar	42	1
		BINF/CHEM 5341/6341***	Anal./Model of Bio Structures	Lecture-Lab	49	3
Fa/Su/Sp	2014-	RSRC 4033	Introduction to Research	Indep. Study	103	0
Fa/Sp	2008,10-11	CHEM 5195/6195	Graduate Seminar	Seminar	21	1
Fa/Su/Sp	2009-	CHEM 4176/4376	Introduction to Research	Indep. Study	74	1 or 3
Fa/Su/Sp	2009-	CHEM 5196/5396; 6196/6396	Graduate Research in Chemistry	Indep. Study	96	1 or 3
Fa/Su/Sp	2012-	CHEM 5398/5399; 6398/6399	Thesis/Dissertation	Indep. Study	16	3
Total	2008-	CHEM/BINF	All	All	3003	8206

* A complete list is [available on-line](#). ** Before 2010, the courses were listed as CHEM 4330 or CHEM 4332, respectively. *** Taught in every other year. ¥ During 2020-2021 COVID-19 Pandemic online teaching, I taught CHEM 3332 both in spring and fall semester and did not teach CHEM 3330 in spring 2020.

Postdoctoral Research Supervised

2015-2019 Supriyo Ray, Ph.D.

Master's Thesis and Doctoral Dissertations Directed

2022- Raymundo Aragon, Ph.D. student of Chemistry
 2021- Yifan Wang, Ph.D. student of Data Science
 2021- Laila Noor, Ph.D. student of Chemistry
 2021- Esther Alarcon, Ph.D. student of Chemistry
 2020- Rui Dong, Ph.D. student of Chemistry
 2019-2021 Zhaobo Li, Ph.D. student of Chemistry (left to different research group)
 2018-2020 Brenda Moreno, M.S. student of Chemistry
 2015-2020 Yuejiao Xian, Ph.D. student of Chemistry
 2016-2018 Martin C. Chacon, Ph.D. (left due to health issues)
 2014-2016 Martin C. Chacon, M.S. student of Chemistry, graduated in 2016.
 Thesis title: "The characterization of a recombinant viroplasm integrase"
 2013-2014 Joe Knapka, non-thesis M.S. student of Bioinformatics program, graduated
 2012-2013 Adrian Enriquez, Ph.D. student of Chemistry (left to different research group)
 2011-2013 Sayan Chakraborty, complete M.S. in Chemistry (Dec. 2013)
 Thesis title: "Expression and Characterization of the Major Capsid Protein (MCP) of a Giant Marine Virus: Cafeteria roenbergensis virus (Crov)"

Curriculum Vitae (C. Xiao)

- 2011-2013 Rishabh Jain, non-thesis M.S student of Bioinformatics program, graduated
2009-2010 Nancy U. Rondeau, Ph.D. student of Chemistry (left due to health issues)
2009-2014 Gustavo A. Avila, complete Ph.D. in Chemistry (Aug. 2014)
Dissertation title: "Biochemical Characterization of Four Distinct Proteins"

Other Graduate Students Served as Their Thesis or Dissertation Committee Members

Recent Master Students from a total of 21

- 2019- Elsa Rodriguez, UTEP Biology
2019-2021 Yifan Wang, UTEP Bioinformatics
2019-2020 Angela Encerrado Manriquez, UTEP Chemistry
2018 Patricia lozano, UTEP Biology (Graduated)
2017- Paulina Villanueva, UTEP Biology
2017- Myriah Acuna, UTEP Biology
2017 Syeed Ahmed, UTEP Physics (Graduated)
2016-2018 Sara Garcia, UTEP Biology
2016- Nadia Rocha, UTEP Biology
2016- Javier Aguilera, UTEP Biology
2015-2016 Faisal Abedin, UTEP Physics (Graduated)
2015 Arifur Rahaman, UTEP Physics (Graduated)
2017- Salvador Vazquez Reyes, UTEP Biology
2016-2019 Xia Huang, UTEP Biomedical Engineering (Graduated)
2016- Nasim Karimi Hosseini, UTEP Biology
2016-2019 Lei Ma, UTEP Chemistry

Recent Ph.D. students selected from total of 20:

- 2020- Elizabeth Noriega Landa, UTEP Chemistry
2020- Kiana Holbrook, UTEP Chemistry
2020- Myriah Acuna, UTEP Biology
2019- Paulina Villanueva, UTEP Biology
2017- Salvador Vazquez Reyes, UTEP Biology
2016-2019 Xia Huang, UTEP Biomedical Engineering (Graduated)
2016- Nasim Karimi Hosseini, UTEP Biology
2016- Lei Ma, UTEP Chemistry
2015- Chenoa Arico, UTEP Biology
2014- Miguel Beltran, UTEP Biology
2014-2018 Jonathan S Abou-Fadel, UTEP Biology (Graduated)
2013-2016 Angelica Lopez, UTEP Biology (Graduated)

Undergraduate Research Projects Directed Selected from a Total of 96

- 2022- Luz Martinez Marquez, EPCC, NIH BRIDGE fellowship
2022- Ivan Acedo Aguilar, UTEP Computer Science
2022- Roberto A Garza Chaparro, UTEP Biological Science, UTEP MERITUS fellow
2022- Emiliano Islas Quinones, UTEP Computer Science
2020-2021 Kevin Alvarez Escalante, UTEP Computer Science
2020- Iliana Pinal, UTEP Biology
2020-2021 Lesly Castaneda-Saldana, UTEP Chemistry
2020- Kristilyn Silva, UTEP Biology, NIH RISE fellowship
2020- Sophia Adame, UTEP Biology, NIH BUILD SCHOLARs summer fellowship
2020-2022 Raymundo Aragonéz, UTEP Biology, NIH BUILD SCHOLARs fellowship
2020- Wendy Salazar, UTEP Biology
2020-2021 Nicholas Dano, UTEP Biology, NIH RISE fellowship
2020-2021 Daniela Cordova, UTEP Biology,

Curriculum Vitae (C. Xiao)

- 2019- Paulina Rios, EPCC Biology, NIH BRIDGE and RISE fellowship
2019-2020 Obed Lopez, UTEP Biology, UTEP SURPASS summer fellowship
2018-2021 Sebastian Sanchez, UTEP Biology, NIH BRIDGE, RISE, and MARC fellowship
2017-2020 Alberto Madariaga, UTEP Chemistry, UTEP SURPASS, NIH RISE fellowship
2019-2020 Shawnan Chen, UTEP Biology, UTEP SURPASS and MERITUS fellowship
2019-2020 Christian Quinones, UTEP Biology, UTEP MERITUS fellowship

High School Student Research Projects Directed (Activities in NSF Educational Grant DRL/1322600 to Dr. Hsu)

- 2014 Mario Rodriguez, Carol Endicott, Alexandra Garcia, Loretta Vazquez, Nataly De Los Santos, Isai Retana, Arturo Mendoza, David Rojorquez, Brandon Chacon, Irvin High School, El Paso

Professional Development Activities in Last Three Years

- 2021 "Cloud Computing Series," NIH STRIDES Training Team. (August 9 - August 31)
2021 "NIH National Network for Cryo-ET Webinar Series," NIH. (July 22 - August 12)
2021 "XXVII online PVA (Phage and Virus Assembly) 2021," PVA. (July 27 - July 30)
2021 "Student Travel Training for Faculty/Staff," UTEP Student Travel office (July 14)
2021 "Real-time cryo-EM analysis for all: cryoSPARC Live," Structura Biotechnology Inc. (June 8)
2021 "TACC: HPC on Frontera," TACC (Texas Advanced Computing Center). (May 20, 2021 - May 21)
2021 "PDB50: A Special Symposium Celebrating the 50th Anniversary of the Protein Data Bank," ASBMB. (May 4 - May 5)
2021 "2021 BioXFEL Crystallization Workshop", BioXFEL: a National Science Foundation Science and Technology Center. (April 2)
2019 "¡Bienvenidos! Faculty Office Hours: Online Office Hours with Blackboard Collaborate", UTEP Blackboard, El Paso, TX (Oct. 11)
2019 "Rescue CPR training", UTEP, El Paso, TX (Sept. 20)
2019 "De-Escalation in Interpersonal Communication", UTEP, El Paso, TX (Aug. 27)
2019 "Living in a (non) Material World: Using Virtual Worlds to Promote Confidence and Decision-Making", UTEP, El Paso, TX (Mar. 13)
2019 "Developing RTI module", BUILDing SCHOLARS, El Paso, TX (Mar. 2 and 8)
2019 "Maintaining Academic Integrity in the Classroom", UTEP, El Paso, TX (Feb. 27)
2018 "Writing Effective Emails for Every Work Situation", UTEP, El Paso, TX (Sept. 4)
2018 "Blackboard Retention Center", UTEP Blackboard, El Paso, TX (Feb. 8)
2018 "Developing RTI module", BUILDing SCHOLARS, El Paso, TX (Jan. 9 and 19)

Professional Service Activities

External Service

- 2023 One of the two co-organizers, XXVIII Biennial Conference on Phage/Virus Assembly.
2020 Panelist, The 3rd Symposium of ACVA/SCBA-Virology.
2020 Session Convener, FASEB SRC of Virus Structure and Assembly, Federation of American Societies for Experimental Biology, Steamboat Springs, CO, USA. (June 28- July 3, 2020, cancelled due to COVID-19).
2020- Associate Editor for 11 papers, Journal of Medical Virology
2011-2021 Paper reviewer of 21 papers from Emerging Microbes and Infections, Journal of Medical Virology, Diversity, Viruses, Journal of Biological Chemistry, Acta Crystallographica Section F, Journal of Structural Biology, Virology, Nature/Methods, PNAS, Frontiers in Microbiology, Scientific Report, Structure, etc
2019 Tenure Package Review for a Faculty from a foreign university

Curriculum Vitae (C. Xiao)

- 2019 Session Chair, XXVI Biennial Conference on Phage/Virus Assembly, Brainerd, MN, USA. (July 14-19, 2019).
- 2018 Tenure Package Review for a Faculty from another US university
- 2015 Textbook Reviewer, Lehninger Principles of Biochemistry, 7e by Nelson and Cox, W.H. Freeman & Company
- 2015 Session Convener, American Society for Virology 34th Annual Meeting, London, Ontario, Canada. (July 11-15, 2015).
- 2012 Ad hoc Reviewer, NSF-OCE, NSF
- 2011 Textbook Reviewer, *Lehninger Principles of Biochemistry*, 6e by Nelson and Cox, W.H. Freeman & Company
- 2011 *Textbook Reviewer, Fundamentals of Biochemistry, 4e by Voet, Voet, and Pratt, John Wiley & Sons, Inc.*
- 2010 Reviewer, NSF-MRI Review Panel One, NSF, Washington DC

University-level Service

- 2019- Substitute Vice Chair when the chair cannot make to the meeting, Institutional Biosafety/recombinant DNA Committee, UTEP
- 2019- member, Faculty Senate Committee for Infrastructure
- 2016-2019 Department Representative, Faculty Senate, UTEP
- 2016-2019 Substitute Chair when the chair cannot make to the meeting, Institutional Biosafety/recombinant DNA Committee, UTEP
- 2014-2016 Vice-chair, Institutional Biosafety/recombinant DNA Committee, UTEP
- 2009-2014 Member; Institutional Biosafety/recombinant DNA Committee, UTEP

College-level Service

- 2019-2020 Member, Search committee for Chemistry Department Chair
- 2019 external member, Biological Sciences Department search committee for evolutionary biologist at assistant professor level
- 2019 external member, Math Department search committee for Biostatistics Assistant Professor
- 2018 external member, Math Department search committee for Bioinformatic Assistant Professor
- 2008-2020 Judge, COURI Summer Symposium
- 2012- Chair, Bioinformatics Colloquium Committee, Bioinformatics Program, UTEP
- 2011 Member, Best Thesis and Dissertation Committee, College of Science, UTEP
- 2008 Judge, SACNAS Symposium at UTEP

Department-level Service

- 2020- Member, Member, Search committee for Faculty Position in Health, Human Disease, and Diagnostics
- 2018- Member, Department Bylaws Committee
- 2018- Member, Department Core Facility Committee
- 2016-2019 Member, Graduate Admission Committee
- 2014 Member, Student Action Plan Committee after Department Retreat, Department of Chemistry, UTEP
- 2013 Member, Cryo-electron Microscope Steering Committee
- 2012-2015 Member, Student Award Committee

Community / Public Service

- 2019 Judge of El Paso 7th STEM Expo (April 27, 2019)
- 2017- Serve as advisor for ASBMB student chapter at UTEP
- 1999-2000 Vice president, Purdue University Chinese Student and Scholar Association, Purdue, IN