Curriculum Vitae

Fu-Cheng (George) Liang

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Department of Chemistry
Midwestern State University
Wichita Falls, TX 76308-2099

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EDUCATION/TRAINING

Post-doctoral Scholar, Biophysics/Biochemistry, June 2017
Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA, USA
Research title: Conformational Dynamics of a Membrane Protein Chaperone Enables Spatially-regulated Substrate Capture and Release
Adviser: Prof. Shu-ou Shan

Doctor of Philosophy, Medical Science (Biophysics/Biochemistry focus), Aug. 2011
Department of Molecular and Cellular Medicine, Texas A&M Health Science Center, College Station, TX
Dissertation: Using Kinetics to Decipher the Mechanism of Protein Transport by the *Escherichia coli* Sec Machinery
Adviser: Prof. Siegfried Musser

Master of Science, Chemistry (Biophysics/Biochemistry focus), Jun. 2002
Department of Chemistry, National Taiwan University, Taipei, Taiwan
Thesis: Glycosylation of an α-Helical Hairpin Peptide: A Model System for Studying the Possible Role of Glycosylation in Signal Transduction
Adviser: Prof. Sunney I. Chan

Bachelor of Science, Chemistry (Physical chemistry focus), Jun. 2000
Department of Chemistry, National Chung Cheng University, Chiayi, Taiwan
Adviser: Prof. Pi-Tai Chou

RESEARCH EXPERIENCES

2022-present **Associate Professor**, Department of Chemistry, Midwestern State University, Wichita Falls, TX 76308

2017-2022 **Assistant Professor**, Department of Chemistry, Midwestern State University, Wichita Falls, TX 76308

1. Decipher the mechanism of protein targeting machinery in Chloroplast.
2. Directed evolution of membrane protein chaperone to ameliorate protein aggregation-associated diseases.
3. Apply membrane protein chaperone as therapeutics to prevent protein aggregation-associated diseases.

2011-2017 **Post-doctoral Research**: PI: Dr. Shu-ou Shan, Division of Chemistry and Chemical Engineering, California Institute of Technology, MC 147-75, Pasadena, CA 91125

1. To understand how membrane protein chaperone is regulated to capture and release of its substrate during the post-translational protein targeting.
2. To understand the structural based of molecular interactions between cpSRP43 and its substrate LHCP by using solution NMR (collaborated with Prof. Peter Wright at Scripps) complemented with mutagenesis analysis.

2004-2011 **Doctoral Research**: PI: Dr. Siegfried Musser, Department of Molecular and Cellular Medicine, Texas A&M Health Science Center, College Station, TX

1. Developed the fluorescence-based transport assay for the *E. Coli* Sec precursor.
2. Applied the real time fluorescence-based transport assay to study:
   - The mechanism of the Sec precursor transport through the SecYEG translocon.
   - Test the SecA insertion/deinsertion model.
   - The effects of a series of charge precursors on the transport mechanism.
3. Applied FRET technique to study the interaction between precursor and SecY.

2002-2004 **Research Assistant:** PI: Dr. Sunney I. Chan, Institute of Chemistry, Academia Sinica, Taiwan

As a professional research assistant, I independently design and execute cutting-edge experiments to address complex biochemical phenomena. My responsibilities encompass solid-phase peptide synthesis and purification, mass spectrometry characterization, NMR structural identification, and protein folding studies.

I have actively contributed to several collaborative projects, including work with Prof. Michael Chan from the Department of Chemistry at Ohio State University to synthesize various dye-labeled peptides, and with Prof. Wun Shain Fann from the Department of Physics at National Taiwan University, utilizing FRET and single-molecule techniques to investigate protein folding

mechanisms.

2000-2002 **Master Research:** PI: Dr. Sunney I. Chan, Department of Chemistry, National Taiwan University, Taipei, Taiwan
Studying the effects of glycosylation and phosphorylation on the peptide conformational change and the rate of nucleation of amyloidogenesis.

1999-2000 **Undergraduate Research:** PI: Dr. Pi-Tai Chou, Department of Chemistry, National Chung Cheng University, Chiayi, Taiwan
Designed/Synthesized the organic compounds to study the excited state double proton transfer.

RESEARCH INTERESTS

- Protein targeting and transport across cell membrane
- Protein folding and misfolding or amyloid formation
- Membrane protein biogenesis
- Therapeutic treatment of Alzheimer's and Parkinson's disease
- Protein structural and functional studies by NMR and fluorescence spectroscopy

QUALIFICATION STATEMENT

I am a highly motivated biophysical chemist with research experiences on studying protein-protein interaction, protein folding and misfolding or aggregation, and protein targeting and translocation across cell membrane.

PROFESSIONAL MEMBERSHIPS

2026 Reviewer for Journal of Chemical Education
2025 Reviewer for Neurobiology of Aging Journal
2024-present Guest editor for the BIOCELL Journal
2024-present Guest editor for the JOVE Journal
2024-present Editorial board member of Molecular Cytology & Disease
2023-present Editorial board member of Journal of Chemistry and Interdisciplinary Research
2022-present Tenured and Associate Professor of biochemistry, Department of Chemistry,

	Midwestern State University
2022-present	Biophysical Society member
2021-present	American Society for Biochemistry and Molecular Biology
2021-present	MSU Health Professions Advisory Committee (HPAC)
2020-present	Faculty Director, Jointed Admission Medical Program (JAMP), Midwestern State University
2019-present	Evaluator of the UGROW Symposium at Midwestern State University
2019-present	MSU Sponsored Programs Administration Development (SPAD) committee
2019-present	Texas Higher education Chemistry Field of Study committee
2019-2025	MSU Academic Readmission Committee
2019-2023	MSU Faculty Forum Committee
2019	Chair of the Wichita Falls-Duncan section of the American Chemical Society (ACS), 2019
2018-present	Adviser of Gamma Sigma Epsilon for Chemistry honor society at Department of Chemistry, Midwestern State University
2018	Chair-elect of the Wichita Falls-Duncan section of the American Chemical Society (ACS), 2018
2017-2022	Assistant Professor of biochemistry, Department of Chemistry, Midwestern State University
2017-present	Associate member of Graduate Faculty, Department of Biology, Midwestern State University
2017-present	Faculty Adviser Tau Kappa Epsilon at Midwestern State University
2017-present	American Chemical Society member
2017-present	Evaluator of the Undergraduate Research & Creative Activity Forum at Midwestern State University
2017-present	Reviewer of enhancing undergraduate research endeavors and creative activities (EURECA) at Midwestern State University
2011-2017	Post-doctoral scholar, Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA Adviser: Prof. Shu-ou Shan
2009-2015	Biophysical Society member
2004-2011	PhD student, Department of Molecular and Cellular Medicine, Texas A&M Health Science Center, College Station, TX Adviser: Prof. Siegfried Musser
2002-2004	Research Assistant, Institute of Chemistry, Academia Sinica, Adviser: Prof. Sunney I. Chan

2000-2002	MS student, Department of Chemistry, National Taiwan University, Adviser: Prof. Sunney I. Chan
1999-2000	Independent study in Prof. Pi-Tai Chou's lab
1999-2000	President, Student Association of Department of Chemistry, National Chung Cheng University

TEACHING EXPERIENCES

Courses taught in Department of Chemistry, Midwestern State University

2026 Fall	General Organic and Biological Chemistry (CHEM 1303)
2026 Fall	Biochemistry lab (CHEM 4242)
2026 Fall	Graduate course Biochemistry I (BIOL 5243)
2026 Fall	Undergraduate course Biochemistry I (CHEM 4243)
2026 Summer	Online General Organic and Biological Chemistry (CHEM 1303)
2026 Spring	Graduate course Biochemistry II (BIOL 5253)
2026 Spring	Undergraduate course Biochemistry II (CHEM 4253)
2026 Spring	Online General Organic and Biological Chemistry (CHEM 1303)
2026 Spring	General Chemistry (CHEM 1243)
2025 Fall	General Chemistry (CHEM 1143)
2025 Fall	General Organic and Biological Chemistry (CHEM 1303)
2025 Fall	Biochemistry lab (CHEM 4242)
2025 Fall	Graduate course Biochemistry I (BIOL 5243)
2025 Fall	Undergraduate course Biochemistry I (CHEM 4243)
2025 Summer	Online General Organic and Biological Chemistry (CHEM 1303)
2025 Spring	Chemistry seminar (CHEM 4001)
2025 Spring	Graduate course Biochemistry II (BIOL 5253)
2025 Spring	Undergraduate course Biochemistry II (CHEM 4253)
2025 Spring	General Organic and Biological Chemistry (CHEM 1303)
2025 Spring	General Chemistry lab (CHEM 1141)
2024 Fall	Graduate course Biochemistry I (BIOL 5243)
2024 Fall	Undergraduate course Biochemistry I (CHEM 4243)
2024 Fall	Biochemistry lab (CHEM 4242)
2024 Fall	General Organic and Biological Chemistry (CHEM 1303)
2024 Summer	Online General Organic and Biological Chemistry (CHEM 1303)
2024 Spring	General Chemistry (CHEM 1243)
2024 Spring	Online General Organic and Biological Chemistry (CHEM 1303)

2024 Spring	General Organic and Biological Chemistry (CHEM 1303)
2024 Spring	Graduate course Biochemistry II (BIOL 5253)
2024 Spring	Undergraduate course Biochemistry II (CHEM 4253)
2023 Fall	General Chemistry (CHEM 1143)
2023 Fall	General Organic and Biological Chemistry (CHEM 1303)
2023 Fall	Biochemistry lab (CHEM 4242)
2023 Fall	Graduate course Biochemistry I (BIOL 5243)
2023 Fall	Undergraduate course Biochemistry I (CHEM 4243)
2023 Summer	Online General Organic and Biological Chemistry (CHEM 1303)
2023 Spring	General Chemistry lab (CHEM 1141)
2023 Spring	General Organic and Biological Chemistry (CHEM 1303)
2023 Spring	Graduate course Biochemistry II (BIOL 5253)
2023 Spring	Undergraduate course Biochemistry II (CHEM 4253)
2022 Fall	General Organic and Biological Chemistry (CHEM 1303)-Section 101
2022 Fall	General Organic and Biological Chemistry (CHEM 1303)-Section 102
2022 Fall	Biochemistry lab (CHEM 4242)
2022 Fall	Graduate course Biochemistry I (BIOL 5243)
2022 Fall	Undergraduate course Biochemistry I (CHEM 4243)
2022 Summer	Online General Organic and Biological Chemistry (CHEM 1303)
2022 Spring	General Chemistry (CHEM 1243)
2022 Spring	General Organic and Biological Chemistry (CHEM 1303)
2022 Spring	Graduate course Biochemistry II (BIOL 5253)
2022 Spring	Undergraduate course Biochemistry II (CHEM 4253)
2021 Fall	General Organic and Biological Chemistry (CHEM 1303)-Section 101
2021 Fall	General Organic and Biological Chemistry (CHEM 1303)-Section 102
2021 Fall	Biochemistry lab (CHEM 4242)
2021 Fall	Graduate course Biochemistry I (BIOL 5243)
2021 Fall	Undergraduate course Biochemistry I (CHEM 4243)
2021 Summer	Online General Organic and Biological Chemistry (CHEM 1303)
2021 Spring	General Chemistry lab (CHEM 1141)
2021 Spring	Chemistry seminar (CHEM 4001)
2021 Spring	General Organic and Biological Chemistry (CHEM 1303)
2021 Spring	Graduated course Biochemistry II (BIOL 5253)
2021 Spring	Undergraduate course Biochemistry II (CHEM 4253)
2020 Fall	General Organic and Biological Chemistry (CHEM 1303)-Section 101
2020 Fall	General Organic and Biological Chemistry (CHEM 1303)-Section 102

2020 Fall	Biochemistry lab (CHEM 4242)
2020 Fall	Graduate course Biochemistry I (BIOL 5243)
2020 Fall	Undergraduate course Biochemistry I (CHEM 4243)
2020 Spring	On-line General Chemistry (CHEM 1243)
2020 Spring	On-line General Organic and Biological Chemistry (CHEM 1303)
2020 Spring	On-line Graduate course Biochemistry II (BIOL 5253)
2020 Spring	On-line Undergraduate course Biochemistry II (CHEM 4253)
2019 Fall	Chemistry seminar (CHEM 4001)
2019 Fall	General Organic and Biological Chemistry (CHEM 1303)-Section 101
2019 Fall	General Organic and Biological Chemistry (CHEM 1303)-Section 102
2019 Fall	Biochemistry lab (CHEM 4242)
2019 Fall	Graduate course Biochemistry I (BIOL 5243)
2019 Fall	Undergraduate course Biochemistry I (CHEM 4243)
2019 Spring	General Chemistry lab (CHEM 1141)
2019 Spring	General Chemistry (CHEM 1243)
2019 Spring	General Organic and Biological Chemistry (CHEM 1303)
2019 Spring	Graduate course Biochemistry II (BIOL 5253)
2019 Spring	Undergraduate course Biochemistry II (CHEM 4253)
2018 Fall	General Organic and Biological Chemistry (CHEM 1303)-Section 101
2018 Fall	General Organic and Biological Chemistry (CHEM 1303)-Section 102
2018 Fall	Biochemistry lab (CHEM 4242)
2018 Fall	Graduate course Biochemistry I (BIOL 5243)
2018 Fall	Undergraduate course Biochemistry I (CHEM 4243)
2018 Spring	General Chemistry lab (CHEM 1141)
2018 Spring	General Chemistry (CHEM 1143)
2018 Spring	General Organic and Biological Chemistry (CHEM 1303)
2018 Spring	Graduate course Biochemistry II (BIOL 5253)
2018 Spring	Undergraduate course Biochemistry II (CHEM 4253)
2017 Fall	General Chemistry lab (CHEM 1241)
2017 Fall	General Organic and Biological Chemistry (CHEM 1303)
2017 Fall	Biochemistry lab (CHEM 4242)
2017 Fall	Graduate course Biochemistry I (BIOL 5243)
2017 Fall	Undergraduate course Biochemistry I (CHEM 4243)

RESEARCH MENTORING EXPERIENCES

2026-Summer Mentoring biology graduate student, Abigail Matthew, Department of Chemistry, Midwestern State University

2026-Summer Mentoring student from Rice University, Jimin Park

2026-Summer Mentoring student from Texas A&M, Ann James

2026-Summer Mentoring Welch scholars, Andrea Granados Millan, Bismah Ahmed and Aayan Ahmed, Department of Chemistry, Midwestern State University

2026-Summer Mentoring high school students, Allen James, Abhi Desai and Chloe Lee

2026-Spring Mentoring EURECA students, Abid Ali, entitled "Utilizing Membrane Protein Chaperones to Prevent and Disrupt Tau P301L Aggregation", Department of Chemistry, Midwestern State University

2026-Spring Mentoring biology students, Zara Farooq and Bismah Ahmed and Aayan Ahmed and Ala Elsharafi, Department of Chemistry, Midwestern State University

2026-Spring Mentoring Welch scholars, Shay Hayden, Heather Rousseau, Conner Anderson, Andrea Granados Millan, Alexis Benavides, Abigail Simbana, Ayaan Farooq and Matthew Hilbers, Department of Chemistry, Midwestern State University

2025-Fall Mentoring Welch scholars, Andrea Granados Millan, Matthew Hilbers, Abigail Simbana and Alexis Benavides, Department of Chemistry, Midwestern State University

2025-Summer Mentoring student from Texas A&M, Ann James

2025-Summer Mentoring Welch scholars, Andrea Granados Millan and Alexis Benavides, Department of Chemistry, Midwestern State University

2025-Summer Mentoring UGROW students, Zara Farooq and Matthew Hilbers, entitled "Developing a Fluorescence Resonance Energy Transfer (FRET) Assay to Study the Disaggregation Activity of a Membrane Protein Chaperone", Department of Chemistry, Midwestern State University

2025-Spring Mentoring Welch scholars, Kara Rodgers, Andrea Granados Millan, Shane Chitwood, Alexis Benavides and Matthew Hilbers, Department of Chemistry, Midwestern State University

2025-Spring Mentoring biology students, Zara Farooq and Abid Ali, Department of Chemistry, Midwestern State University

2025-Spring Mentoring biology graduate student, Abigail Matthew, Department of Chemistry, Midwestern State University

2025-Spring Mentoring biology senior students, Lana Haddad and Lenore Adjodha, Department of Chemistry, Midwestern State University

2024-Fall Mentoring biology senior students, Lana Haddad and Lenore Adjodha,

	Department of Chemistry, Midwestern State University
2024-Fall	Mentoring biology graduate student, Isabella Makelaar, and advising master thesis defense, Department of Chemistry, Midwestern State University
2024-Fall	Mentoring Welch scholars, Kara Rodgers, Andrea Granados Millan and Shane Chitwood, Department of Chemistry, Midwestern State University
2024-Summer	Mentoring UGROW students, Andrea Granados Millan, entitled "Exploring the Impact of Salt on Protein Aggregation Kinetics in Familial Alzheimer's Disease Mutations", Department of Chemistry, Midwestern State University
2024-Summer	Mentoring biology graduate student, Isabella Makelaar, Department of Chemistry, Midwestern State University
2024-Spring	Mentoring Welch scholars, Andrew Vann, Kara Rodgers and Isabella Makelaar, Department of Chemistry, Midwestern State University
2024-Spring	Mentoring EURECA students, Abigail Guinan, entitled "Using Membrane Protein Chaperone to Disrupt the Alpha-Synuclein Protein Aggregation: A Potential Treatment for Parkinson Disease", Department of Chemistry, Midwestern State University
2023-Fall	Mentoring EURECA students, Abigail Guinan, entitled "Using Membrane Protein Chaperone to Disrupt the Alpha-Synuclein Protein Aggregation: A Potential Treatment for Parkinson Disease", Department of Chemistry, Midwestern State University
2023-Fall	Mentoring Welch scholars, Connor Mitchell, Andrew Vann, Kara Rodgers and Isabella Makelaar, Department of Chemistry, Midwestern State University
2023-Summer	Mentoring Welch scholars, Connor Mitchell, Andrew Vann, Kara Rodgers and Isabella Makelaar, Department of Chemistry, Midwestern State University
2023-Summer	Mentoring UGROW students, Abigail Matthew, entitled "Membrane Protein Chaperone Prevents and Disrupts Alpha-Synuclein Protein Aggregation: A Potential Treatment for Parkinson's disease", Department of Chemistry, Midwestern State University
2023-Spring	Mentoring Welch scholars, Connor Mitchell, Andrew Vann, Hunter Ordner, Kara Rodgers and Isabella Makelaar, Department of Chemistry, Midwestern State University
2023-Spring	Mentoring High School student, Chaitanya Reddy, Department of Chemistry, Midwestern State University
2023-Spring	Mentoring EURECA students, Abigail Guinan, entitled "Using Membrane Protein Chaperone to Prevent and Disrupt the Alpha-Synuclein Protein Aggregation in Parkinson Disease" Department of Chemistry, Midwestern

State University

2023-Spring Mentoring EURECA students, Abigail Matthew, entitled "Using Membrane Protein Chaperone to Prevent Familial Mutant of Alpha-Synuclein Protein Aggregation in Parkinson Disease", Department of Chemistry, Midwestern State University

2022-Fall Mentoring Welch scholar, Connor Mitchell, Andrew Vann, Hunter Ordner, Kara Rodgers and Isabella Makelaar, Department of Chemistry, Midwestern State University

2022-Fall Mentoring Biology student, Abigail Guinan, Department of Chemistry, Midwestern State University

2022-Fall Mentoring High School student, Chaitanya Reddy, Department of Chemistry, Midwestern State University

2022-Fall Mentoring EURECA students, Abigail Matthew, entitled "Using Membrane Protein Chaperone to Prevent Familial Mutant of Alpha-Synuclein Protein Aggregation in Parkinson Disease", Department of Chemistry, Midwestern State University

2022-Summer Mentoring Welch scholar, Connor Mitchell, Hunter Ordner, Kara Rodgers and Isabella Makelaar, Department of Chemistry, Midwestern State University

2022-Spring Mentoring Welch scholar, Connor Mitchell, Hunter Ordner, Sebastian Chavira and Kara Rodgers and Isabella Makelaar, Department of Chemistry, Midwestern State University

2022-2023 Mentoring Computer Science graduate student, Leslie Cook, Department of Chemistry, Midwestern State University

2022-Spring Mentoring Biology senior student, Viviana James, Brett Mitchell and Justlyn Ferrol, Department of Chemistry, Midwestern State University

2021-Fall Mentoring Welch scholar, Connor Mitchell and Hunter Ordner, Department of Chemistry, Midwestern State University

2021-Fall Mentoring Post-baccalaureate student, Porscha Weaver, Dirgha Vora and Leslie Cook, Department of Chemistry, Midwestern State University

2021-Summer Mentoring Welch scholar, Connor Mitchell, Department of Chemistry, Midwestern State University

2021-Summer Mentoring Post-baccalaureate student, Leah Slade, Ryan Smith, Porscha Weaver and Dirgha Vora, Department of Chemistry, Midwestern State University

2021-Spring Mentoring Welch scholars, Leah Slade and Hunter Ordner, Department of Chemistry, Midwestern State University

2021-Spring Mentoring Senior students, Porscha Weaver and Dirgha Vora, entitled "Using Membrane Protein Chaperone to Rescue the Phenotype in a Fly Model of Parkinson's disease", Department of Chemistry, Midwestern State University

2021-Spring Mentoring Senior students, Ryan Smith, entitled "Utilizing Membrane Protein Chaperone as a Treatment to Ameliorate Tau Protein Aggregation", Department of Chemistry, Midwestern State University

2021-Spring Mentoring EURECA students, Christopher Sun, entitled "Applying Membrane Protein Chaperone as Therapeutics to Prevent Amyloid Beta Aggregation", Department of Chemistry, Midwestern State University

2020-Fall Mentoring EURECA students, Christopher Sun, entitled "Applying Membrane Protein Chaperone as Therapeutics to Prevent Amyloid Beta Aggregation", Department of Chemistry, Midwestern State University

2020-Fall Mentoring EURECA students, Porscha Weaver and Dirgha Vora, entitled "Using Membrane Protein Chaperone to Rescue the Phenotype in a Fly Model of Parkinson's disease", Department of Chemistry, Midwestern State University

2020-Fall Mentoring EURECA students, Dianna Daniel and Ryan Smith, entitled "Utilizing Membrane Protein Chaperone as a Treatment to Ameliorate Tau Protein Aggregation", Department of Chemistry, Midwestern State University

2020-Fall Mentoring Welch scholars, Leah Slade and Hunter Ordner, Department of Chemistry, Midwestern State University

2020-Fall Mentoring Welch scholars, Chaniqua Moses and Ajani Thomas, entitled "Synthesis of Effective Drug to Inhibit Amyloid Beta Aggregation", Department of Chemistry, Midwestern State University

2020-July Mentoring UGROW students, Blanca Turner and Dianna Daniel, entitled" Utilizing Membrane Protein Chaperone to Prevent Amyloid Plaques and Neurofibrillary Tangle Formation in Alzheimer's Disease", Department of Chemistry, Midwestern State University

2020-Spring Mentoring EURECA students, Dianna Daniel and Ryan Smith, entitled "Utilizing Membrane Protein Chaperone as a Treatment to Ameliorate Tau Protein Aggregation", Department of Chemistry, Midwestern State University

2020-Spring Mentoring EURECA students, Porscha Weaver and Dirgha Vora, entitled "Using Membrane Protein Chaperone to Rescue the Phenotype in a Fly Model of Parkinson's disease", Department of Chemistry, Midwestern State University

2019-present Mentoring graduate students, James Denton, entitled "Utilization of Amber Suppression to Determine the Substrate Binding Sites on Membrane Protein Chaperone", Department of Chemistry/Biology, Midwestern State University

2019-Fall Mentoring EURECA students, Dianna Daniel, entitled "Utilize Membrane Protein Chaperone as a Treatment to Ameliorate Tau Protein Aggregation", Department of Chemistry, Midwestern State University

2019-Fall Mentoring EURECA students, Prisca Mbonu, entitled "Directed Evolution of Membrane Protein Chaperone to Ameliorate Protein Aggregation-Associated Diseases", Department of Chemistry, Midwestern State University

2019-July Mentoring UGROW students, Prisca Mbonu, Christopher Sun, Dolly Mombeyarara, and Cheslin Maloney, entitled "Apply Membrane Protein Chaperone as Therapeutics to Prevent Protein Aggregation Associated Diseases", Department of Chemistry, Midwestern State University

2019-Spring Mentoring EURECA students, Prisca Mbonu, entitled "Directed Evolution of Membrane Protein Chaperone to Ameliorate Protein Aggregation-Associated Diseases", Department of Chemistry, Midwestern State University

2018-July Mentoring UGROW students, Kameron Shrum and Tyler Jones, entitled " Decipher the Mechanism of Protein Targeting Machinery in Chloroplast" Department of Chemistry, Midwestern State University

2017-2018 Mentoring Welch scholars, Maddison Allison, Kameron Shrum, James Denton, Danielle Dowe, Teri Douglas, Shermali Ratnasinghe and Matthew Mitchell Department of Chemistry, Midwestern State University

2016-2017 Coaching 2016 Science Olympiad in Field elementary school, Pasadena, California

2016-2017 Mentoring SURF undergraduate and exchange students, Wen-Hua Lee and XiangXinyao, in Division of Chemistry and Chemical Engineering, California Institute of Technology

2014-2015 Mentoring high school students, Chris Chi, on protein NMR assignment in Division of Chemistry and Chemical Engineering, California Institute of Technology

2013-2014 Mentoring SURF undergraduate students, Samantha Piszkiewicz, in Division of Chemistry and Chemical Engineering, California Institute of Technology

2010-2011 Mentoring research assistant, Anita Pokharel, in Department of Molecular and Cellular Medicine, Texas A&M Health Science Center

2001-2002 Mentoring master student, Lily Y-L Lee, in Institute of Chemistry, Academia Sinica

2000-2001 Teaching Assistant of the course "General Chemistry Laboratory" with science teacher, She, Jui–Lin, in Department of Chemistry, National Taiwan University

THESIS COMMITTEES

2026-Spring Shamima Jasmen, "Structural and Biochemical Characterization of Rice (Oryza sativa) Cell Walls Under pH Stress Conditions"

2026-Spring Veenus Nikitha Allam, "Evaluation of Antibacterial and Cytotoxic Properties of Turmeric (Curcuma longa) Extracts Against Multidrug-Resistant Escherichia coli and Staphylococcus aureus"

2025-Spring Abigail Matthew, "Molecular Analysis of cpSRP43-mediated Modulation of Wild-type and Mutant (A53T, A30P) A-Synuclein Aggregation in Parkinson's disease"

2024-Spring Isabella Makelaar, "Utilizing Membrane Protein Chaperone to Prevent and Disrupt Alpha-synuclein Protein Aggregation in Parkinson's disease"

2024-Fall Merina Guiste, "A Comparison of Oxygen-Regulated Metabolic Adaptations in Escherichia coli Using a Lung Mucus Model"

GRANT WRITING AND ACQUISITION

- 2025 Texas Tech system Institute for One Health Innovation (IOHI) Seed Funding Grant FY26 submission entitled "Developing novel screening tools to assess nano- and microplastic-driven protein aggregation in Alzheimer's disease", **Status:** decline, total request cost $33,333
- 2024 NIH R16 proposal entitled: Utilizing Membrane Protein Chaperone as Therapeutics to Prevent and Disrupt Protein Aggregation in Parkinson's disease. **Impact Score**: 41, total request cost $534,620.
- 2023 NIH S10 proposal entitled: Advanced Microscopy Station: Epifluorescence, Total Internal Reflection Fluorescence, and Differential Interference Contrast. **Not discussed**.
- 2023 NIH R16 proposal entitled: Utilizing Membrane Protein Chaperone as Therapeutics to Prevent Protein Aggregation-Associated Disease. **Impact Score**: 45, total request cost $518,461.
- 2023 Welch Research grant entitled: Utilizing Membrane Protein Chaperone to Prevent and Disrupt Protein Aggregation. **Rejected**.
- 2022 Co-PI for Jean Dreyfus Lectureship for Undergraduate Institutions.
- 2022 NIH R16 proposal entitled: Utilizing Membrane Protein Chaperone as Therapeutics to Prevent Protein Aggregation-Associated Disease. **Impact Score**: 54, total request cost $492,600.

- 2021 NIH R15 proposal entitled: Utilizing Membrane Protein Chaperone and Chemical Chaperone as Therapeutics to Prevent Protein Aggregation-Associated Disease. **Not discussed**.
- 2020 NSF MRI proposal entitled: Acquisition of an 80 MHz NMR to enhance undergraduate and faculty research at Midwestern State University. **Status: decline**, total request cost $122,189.
- 2019 NSF MRI proposal entitled: Acquisition of an 80 MHz NMR to enhance undergraduate and faculty research at Midwestern State University. **Status: decline**, total request cost $121,642.
- 2019 NSF CAREER proposal entitled: Characterize and Apply Novel Membrane Protein Chaperone to Prevent Protein Aggregation in Vitro. **Status: decline**, total request cost $605,795.
- 2018 NSF MRI proposal entitled: Acquisition of a 500 MHz NMR to enhance undergraduate and faculty research at Midwestern State University. **Status: decline**, total request cost $858,000.

RESEARCH GRANT

MSU Undergraduate Student Research Funding

- 2026 Award EURECA project ($500) with students, **Fu-Cheng Liang**, Ala Elsharafi, entitled "Directed Evolution of Membrane Protein Chaperone to Ameliorate Protein Aggregation-Associated Diseases", Department of Chemistry, Midwestern State University
- 2026 Award EURECA project ($500) with students, **Fu-Cheng Liang**, Abid Ali, entitled "Utilizing Membrane Protein Chaperones to Prevent and Disrupt Tau P301L Aggregation", Department of Chemistry, Midwestern State University
- 2025 Award UGROW project ($500) with student, **Fu-Cheng Liang**, Zara Farooq and Matthew Hilbers, entitled "Developing a Fluorescence Resonance Energy Transfer (FRET) Assay to Study the Disaggregation Activity of a Membrane Protein Chaperone", Department of Chemistry, Midwestern State University
- 2024 Award UGROW project ($500) with student, **Fu-Cheng Liang** and Andrea Granados Millan, entitled "Exploring the Impact of Salt on Protein Aggregation Kinetics in Familial Alzheimer's Disease Mutations", Department of Chemistry, Midwestern State University
- 2024 Spring, Award EURECA project ($500) with student, **Fu-Cheng Liang** and Abigail Guinan, entitled "Using Membrane Protein Chaperone to Disrupt the Alpha-Synuclein

Protein Aggregation: A Potential Treatment for Parkinson Disease", Department of Chemistry, Midwestern State University

- 2023 Fall, Award EURECA project ($500) with student, **Fu-Cheng Liang** and Abigail Guinan, entitled "Using Membrane Protein Chaperone to Disrupt the Alpha-Synuclein Protein Aggregation: A Potential Treatment for Parkinson Disease", Department of Chemistry, Midwestern State University
- 2023 Award UGROW project ($500) with student, **Fu-Cheng Liang** and Abigail Matthew, entitled "Membrane Protein Chaperone Prevents and Disrupts Alpha-Synuclein Protein Aggregation: A Potential Treatment for Parkinson's disease", Department of Chemistry, Midwestern State University
- 2023 Spring, Award EURECA project ($500) with student, **Fu-Cheng Liang** and Abigail Guinan, entitled "Using Membrane Protein Chaperone to Prevent and Disrupt the Alpha-Synuclein Protein Aggregation in Parkinson Disease", Department of Chemistry, Midwestern State University
- 2022 Fall and 2023 Spring, Award EURECA project ($500) with student, **Fu-Cheng Liang** and Abigail Matthew, entitled "Using Membrane Protein Chaperone to Prevent Familial Mutant of Alpha-Synuclein Protein Aggregation in Parkinson Disease", Department of Chemistry, Midwestern State University
- 2020 Fall and 2021 Spring, Award EURECA project ($500) with student, **Fu-Cheng Liang,** and Christopher Sun, entitled "Applying Membrane Protein Chaperone as Therapeutics to Prevent Amyloid Beta Aggregation", Department of Chemistry, Midwestern State University
- 2020 Award UGROW project ($500) with students, **Fu-Cheng Liang,** Blanca Turner and Dianna Daniel, entitled "Utilizing Membrane Protein Chaperone to Prevent Amyloid Plaques and Neurofibrillary Tangle Formation in Alzheimer's Disease", Department of Chemistry, Midwestern State University
- 2019 Fall to 2020 Fall, Award EURECA project ($500) with students, **Fu-Cheng Liang,** Dianna Daniel and Ryan Smith, entitled "Utilizing Membrane Protein Chaperone as a Treatment to Ameliorate Tau Protein Aggregation", Department of Chemistry, Midwestern State University
- 2020 Spring and 2020 Fall, Award EURECA project ($500) with students, **Fu-Cheng Liang,** Porscha Weaver and Dirgha Vora, entitled "Using Membrane Protein Chaperone to Rescue the Phenotype in a Fly Model of Parkinson's disease", Department of Chemistry, Midwestern State University
- 2019 Spring and 2019 Fall, Award EURECA project ($500) with student, **Fu-Cheng Liang** and Prisca Mbonu, entitled "Directed Evolution of Membrane Protein Chaperone to

Ameliorate Protein Aggregation-Associated Diseases", Department of Chemistry, Midwestern State University

- 2019 Award UGROW project ($500) with students, **Fu-Cheng Liang,** Prisca Mbonu, Christopher Sun, Dolly Mombeyarara, and Cheslin Maloney, entitled "Apply Membrane Protein Chaperone as Therapeutics to Prevent Protein Aggregation Associated Diseases", Department of Chemistry, Midwestern State University
- 2018 Award UGROW project ($500) with students, **Fu-Cheng Liang,** Kameron Shrum and Tyler Jones, entitled" Decipher the Mechanism of Protein Targeting Machinery in Chloroplast" Department of Chemistry, Midwestern State University

Research and Development Funding

- Award 2026 NIH R16 grant by the National Institute of Neurological Disorders and Stroke of the National Institutes of Health (Award Number R16NS151382) entitled: Utilizing Membrane Protein Chaperone as Therapeutics to Prevent and Disrupt Protein Aggregation in Parkinson's disease, total request cost $534,620
- Award 2026 Robert A. Welch Equipment grant (Grant No: Q-BO-0049-20260402) with a total amount of $75,000 for one year as a co-Principal Investigator. This grant is intended to improve a department's capabilities in chemical research and to give faculty and students a richer laboratory experience.
- Award MSU Fall 2024 intramural grant with the total amount of $9350 for the project titled "Utilizing Membrane Protein Chaperones as Therapeutics to Prevent and Disrupt Protein Aggregation in Parkinson's disease"
- Award MSU Spring 2024 Office of Sponsored Programs and Research (OSPR) equipment grant with the total amount of $24,950 for the purchasing of LM10 Microfluidizer
- Award 2023 Robert A. Welch Equipment grant (Grant No: Q-AO-0007-20230405) with a total amount of $75,000 for one year as a co-Principal Investigator. This grant is intended to improve a department's capabilities in chemical research and to give faculty and students a richer laboratory experience.
- Award Robert A. Welch departmental research fund (ID# AO-0001) with an annual direct costs of $45,000 during 2023 – 2026 as a co-Principal Investigator. This grant is used to support chemistry faculty's research as well as provide scholarship for chemistry students to sponsor their undergraduate research program at MSU.
- Award 2023 American Chemical Society (ACS) Summer Experiences for the Economically Disadvantaged (SEED) grant with a total amount of $3200 as a co-Principal Investigator. Project SEED gives grants to ACS certified institutions and industry who are able to recruit high school students to do summer research in chemistry. Project entitles

"Biophysical and Biochemical Characterization of a Familial Mutant Protein in Parkinson Disease".

- Award 2022 Intramural Proposal Development Grants program from MSU's Office of Sponsored Programs and Research. This grant is used to prepare the grant proposal and submit to an external funding agency.
- Award Texas Legislature-funded JAMP undergraduate school to support students to apply for medical school and provide the guidance to apply for the JAMP.
- Award 2017 MCOSM internal research funding for the proposal entitled "Protein Targeting in Chloroplast".
- Award 2017 MCOSME startup funding $10,000 per year for three years

HONOR AND TRAINING PROGRAM

2026	Award MCSOME Favorite Chemistry Faculty
2024	Award MCSOME Favorite Chemistry Professor
2020-2021	Faculty member of the year, Student Government Association, Midwestern State University
2020	Tri-Beta Professor of Month, Midwestern State University
2020	MCOSME faculty research award, Midwestern State University
2015	2015 Biophysical Society Educational Committee Travel Award
2004-2011	Research Assistantship for participating in NIH project in College of Medicine Texas A&M Health Science Center
2007/04	Awarded "Junior Category 2nd Placement for Poster Presentation" by 12th Annual Student Research Symposium in College of Medicine Texas A&M Health Science Center
2003/03	Awarded Travel Fellowship provided by "Glycoscience Research Education Foundation" , and amount: NT30000
2002/06	Awarded "Master Thesis Excellent Poster Presentation" by Department of Chemistry, National Taiwan University
2000/09	Award "Ministry of Education Scholarship for Graduate Students" by Department of Chemistry, National Taiwan University for two years
2000/09	Traineeships for participating in Academia Sinica program project "Carbohydrate Chemistry and Biochemistry of Glycoconjugates"
2000/07	Participated in **"**Biotechnology Core Techniques" in National Taiwan University
1999/09	Traineeships for participating in National Science Council undergraduate

student's research project "Excited state double proton transfer"

1999/07 Ranked first in the class of 45 students; therefore, has been awarded "THE PRESIDENT'S AWARD" by the National Chung Cheng University via the recommendation of the Department of Chemistry and Administration, and amount: NT30000

PUBLICATIONS

1. Christopher Sun, Leah Slade, Prisca Mbonu, Hunter Ordner, Connor Mitchell, Matthew Mitchell and **Fu-Cheng Liang**, (2024) *The FEBS Journal,* **291**, 158-176, "Membrane Protein Chaperone and Sodium Chloride Modulate the Kinetics and Morphology of Amyloid Beta Aggregation" ***Impact Factor = 5.6; Citation = 4***
2. Alex Siegel, Camille Z. McAvoy, Vinh Lam, **Fu-Cheng Liang**, Gerard Kroon, Emily Miaou, Patrick Griffin, Peter E. Wright, Shu-ou Shan (2020) *Journal of Molecular Biology*, **432**, 166708, "A Disorder-to-Order Transition Activates an ATP-Independent Membrane Protein Chaperone." ***Impact Factor = 5.4; Citation = 9***
3. Peng Wang, **Fu-Cheng Liang**, Daniel Wittmann, Alex Siegel, Shu-ou Shan, and Bernhard Grimm (2018) *Proceedings of the National Academy of Sciences of the United States of America*, **115**, E3588-E3596, "Chloroplast SRP43 Acts as a Chaperone for Glutamyl-tRNA Reductase, the Rate-limiting Enzyme in Tetrapyrrole Biosynthesis." ***Impact Factor = 11.2; Citation = 75***
4. **Fu-Cheng Liang**, Gerard J. Kroon, Camille McAvoy, Chris Chi, Peter Wright and Shu-ou Shan, (2016) *Proceedings of the National Academy of Sciences of the United States of America*, **113**(**12**), E1615-E1624 "Conformational Dynamics of a Membrane Protein Chaperone Enables Spatially-regulated Substrate Capture and Release." ***Impact Factor = 11.2; Citation = 47***
5. Peera Jaru-Ampornpan, **Fu-Cheng Liang**, Alex Nisthal, Thang X. Nguyen, Steven Mayo, and Shu-ou Shan (2013) *The Journal of Biological Chemistry*, **288**, 13431-13445 "Mechanism of an ATP-independent Protein Disaggregase: II. Distinct Molecular Interactions Drive Multiple Steps during Aggregate Disassembly." ***Impact Factor = 5.1; Citation = 34***
6. **Fu-Cheng Liang**, Umesh K. Bageshwar and Siegfried M. Musser (2012) *The Journal of Biological Chemistry*, **287**, 12703-12714 "Position-dependent Effects of Polylysine on Sec Protein Transport." ***Impact Factor = 5.1; Citation = 17***
7. **Fu-Cheng Liang**, Umesh K. Bageshwar and Siegfried M. Musser (2009) *Molecular Biology*

of the Cell, **20**, 4256-4266 "Bacterial Sec Protein Transport is Rate-Limited by Precursor Length: A Single Turnover Study." ***Impact Factor = 3.7; Citation = 32***

8. Umesh K. Bageshwar, Neal Whitaker, **Fu-Cheng Liang** and Siegfried M. Musser (2009) *Molecular Microbiology*, **74(1)**, 209-226 "Interconvertibility of Lipid- and Translocon-Bound Forms of the Bacterial Tat Precursor pre-Sufl." ***Impact Factor = 3.8; Citation = 73***
9. Marianne M. Lee, Clara E. Isaza, James D. White, Rita P.-Y. Chen, **George F.-C. Liang**, Hannah T.-F. He, Sunney I. Chan, Michael K. Chan (2009) *Proteins: Structure, Function, and Bioinformatics*, **77(3)**, 647-657 "Insight into the Substrate Length Restriction of M32 Carboxypeptidases: Characterization of Two Distinct Subfamilies." ***Impact Factor = 3.7; Citation = 24***
10. Rita P.-Y. Chen, **Fu-Cheng Liang**, Chung-Tien Lee, Rosa Zerella and Sunney I. Cha**n** (2008**)** *Journal of the Chinese Chemical Society* **55(4),** 772-781 **"**Contributions of a Surface Hydrophobic Cluster to the Folding and Structural Stability of Ubiquitin." ***Impact Factor = 1.5; Citation = 1***
11. Clara E. Isaza, Xuejun Zhong, Lucia E. Rosas, James D. White, Rita P.-Y. Chen, **George F.-C. Liang**, Sunney I. Chan, Abhay R. Satoskar and Michael K. Chan (2008) *Biochem Biophys Res Commun.* **373(1)**, 25-29 "A Proposed role for Leishmania major Carboxypeptidase in Peptide Catabolism." ***Impact Factor = 3.5; Citation = 25***
12. **Fu-Cheng Liang**, Rita P.-Y. Chen, Chun-Cheng Lin, Kuo-Ting Huang and Sunney I. Chan (2006**)** *Biochem Biophys Res Commun.* **342(2)**, 482-488 "Tuning the Conformation Properties of a Peptide by Glycosylation and Phosphorylation." ***Impact Factor = 3.5; Citation = 44***

MANUSCRIPTS IN PREPARATION

13. Fu-Cheng Liang, Kameron Shrum and Tyler Jones, "LTD Does Not Function as Membrane Protein Chaperone During Protein Targeting in Chloroplast"
14. Fu-Cheng Liang, Dianna Daniel and Ryan Smith, "Utilizing Membrane Protein Chaperone as a Treatment to Ameliorate Tau Protein Aggregation"

CONFERENCES ABSTRACT

1. Kameron Lee Shrum, **Fu-Cheng Liang** (2020) 259th ACS National Meeting & Exposition, Philadelphia, PA, United States, CHED-0592. "LTD does not function as a membrane protein chaperone during protein targeting in the chloroplast."

2. Matthew Glen Mitchell, **Fu-Cheng Liang** (2020) 259th ACS National Meeting & Exposition, Philadelphia, PA, United States, CHED-0521. "Applying membrane protein chaperone as therapeutics to prevent Alzheimer's disease."
3. Camille McAvoy, **Fu-Cheng Liang,** Emily Miaou, and Shu-ou Shan (2017) *Protein Science*, **26** (S1). pp. 29-30. ISSN 0961-8368. "Dynamics of Membrane Protein-Chaperone Interaction."
4. **Fu-Cheng Liang,** Camille McAvoy, Samantha Piszkiewicz, Gerard J. Kroon, Maria Yamout, Peter Wright and Shu-ou Shan, (2015) *Biophysical Journal*, **108**, 53A "inter-domain Dynamics of a Novel Chaperone Enables Effective Capture of Membrane Protein Substrates."
5. **Fu-Cheng Liang,** Umesh K. Bageshwar and Siegfried M. Musser (2012) *Biophysical Journal*, **102**, 106A "Position-dependent Effects of Polylysine on Sec Protein Transport."

PRESENTATIONS and CONFERENCES

1. Thomas Vu and Fu-Cheng Liang (2026) **Poster Presentation**, Celebration of scholarship, "Therapeutic Approach toward the Treatment of Type II Diabetes (Literature Review)"
2. Ayaan Farooq and Fu-Cheng Liang (2026) **Poster Presentation**, Celebration of scholarship, "Targeting Microglial Dysfunction in Alzheimer's Disease Using Nanoparticle-Based Therapeutics (Literature Review)"
3. Abid Ali and Fu-Cheng Liang (2026) **Oral Presentation**, Celebration of scholarship, "Utilizing Membrane Protein Chaperones as Therapeutics to Prevent and Disrupt Tau Protein Aggregation"
4. Andrea Granados Millan and Fu-Cheng Liang (2026) **Poster Presentation**, Celebration of scholarship at MSU, "Utilizing Membrane Protein Chaperones to Prevent and Disrupt Aggregation of the Familial Amyloid Beta E22G Mutant: A Potential Treatment for Alzheimer's disease"
5. George Liang (2026) **Oral Presentation,** Invited Speaker to celebration of scholarship at MSU, entitled "Utilizing Membrane Protein Chaperones as Therapeutics to Prevent and Disrupt Protein Aggregation in Parkinson's disease"
6. George Liang (2026) **Oral Presentation,** Invited Speaker to STEM conference at MSU, entitled "Utilizing Membrane Protein Chaperone as Therapeutics to Prevent and Disrupt Protein Aggregation in Alzheimer's disease"
7. Zara Farooq, Matthew Hilbers and Fu-Cheng Liang (2026) **Poster Presentation**, STEM conference at MSU, "Developing a Fluorescence Resonance Energy Transfer (FRET) Assay to Study the Disaggregation Activity of a Membrane Protein Chaperone"

8. Zara Farooq, Matthew Hilbers and Fu-Cheng Liang (2026) **Poster Presentation**, The Great Plains Honors Council (GPHC) annual conference, "Developing a Fluorescence Resonance Energy Transfer (FRET) Assay to Study the Disaggregation Activity of a Membrane Protein Chaperone" (Best STEM poster presentation award)
9. Andrea Granados Millan and Fu-Cheng Liang (2026) **Poster Presentation**, The Great Plains Honors Council (GPHC) annual conference, "Utilizing Membrane Protein Chaperones to Prevent and Disrupt Aggregation of the Familial Amyloid Beta E22G Mutant: A Potential Treatment for Alzheimer's disease"
10. Emily Borden and Fu-Cheng Liang (2025) Poster Presentation, 25th MSU Undergraduate Research & Creative Activities Forum, "Turning Stem Cells Into Neurons: A Therapeutic Approach toward the Treatment of Parkinson's Disease (Literature Review)"
11. Zara Farooq, Matthew Hilbers and Fu-Cheng Liang (2025) **Poster Presentation**, 25th MSU Undergraduate Research & Creative Activities Forum, "Developing a Fluorescence Resonance Energy Transfer (FRET) Assay to Study the Disaggregation Activity of a Membrane Protein Chaperone"
12. Zara Farooq, Matthew Hilbers and Fu-Cheng Liang (2025) **Poster Presentation**, 2025 IOHI Annual meeting at Texas Tech University Health Science Center, "Developing a Fluorescence Resonance Energy Transfer (FRET) Assay to Study the Disaggregation Activity of a Membrane Protein Chaperone" (Second place for poster presentation award)
13. Andrea Granados Millan and Fu-Cheng Liang (2025) **Poster Presentation**, 2025 IOHI Annual meeting at Texas Tech University Health Science Center, "Exploring the Impact of Salt on Protein Aggregation Kinetics in Familial Alzheimer's Disease Mutations" (Third place for poster presentation award)
14. George Liang (2025) **Oral Presentation,** Invited Speaker to MSU Honors class (MWSU 2003), entitled "Utilizing Membrane Protein Chaperone as Therapeutics to Prevent and Disrupt Protein Aggregation in Alzheimer's disease"
15. Zara Farooq, Matthew Hilbers and Fu-Cheng Liang (2025) **Oral Presentation**, 20th Annual UGROW Symposium at Midwestern State University, "Developing a Fluorescence Resonance Energy Transfer (FRET) Assay to Study the Disaggregation Activity of a Membrane Protein Chaperone"
16. George Liang (2025) **Oral Presentation,** Invited Speaker, 6th International Conference on Cell and Experimental Biology at Houston, entitled "Membrane Protein Chaperone Affects the Kinetics and Morphology of Amyloid Beta Aggregation"
17. Kara Rodgers and Fu-Cheng Liang (2025) **Poster presentation**, NCUR 2025 poster presentation, "Membrane Protein Chaperone Influences Tau Aggregation Kinetics and Morphology: A Therapeutic Approach for Alzheimer's disease"

18. Andrea Granados Millan and Fu-Cheng Liang (2025) **Poster Presentation**, The Great Plains Honors Council (GPHC) annual conference, "Exploring the Impact of Salt on Protein Aggregation Kinetics in Familial Alzheimer's Disease Mutations" (Best STEM poster presentation award)
19. Andrea Granados Millan and Fu-Cheng Liang (2024) **Poster Presentation**, MSU 23th Undergraduate Research and Creative Activity Forum, "Exploring the Impact of Salt on Protein Aggregation Kinetics in Familial Alzheimer's Disease Mutations"
20. George Liang (2024) **Oral Presentation**, UGROW workshop at Midwestern State University, "Principle and Hands-on Operations of Fluorescence Spectroscopy"
21. Andrea Granados Millan and Fu-Cheng Liang (2024) **Oral Presentation**, 19th Annual UGROW Symposium at Midwestern State University, "Exploring the Impact of Salt on Protein Aggregation Kinetics in Familial Alzheimer's Disease Mutations"
22. George Liang (2024) **Oral Presentation,** Invited Speaker to MSU Honors class (MWSU 2003), entitled "Utilizing Membrane Protein Chaperone as Therapeutics to Prevent and Disrupt Protein Aggregation in Alzheimer's disease"
23. Sydney Macdonald, Zaniya Medlin and Dr. Fu-Cheng Liang (2024) **Poster presentation**, MSU 22nd Undergraduate Research and Creative Activity Forum, "Deciphering the Binding Profiles of Lecanemab, Aducanumab, and Gantenerumab to Various Amyloid-Beta Forms: Insights into Efficacy and Side Effects in Alzheimer's disease Clinical Trials"
24. Crae Jackson and Dr. Fu-Cheng Liang (2024) **Poster presentation**, MSU 22nd Undergraduate Research and Creative Activity Forum, "Unraveling the Bi-directional Relationship between Periodontitis and Diabetes: Strategies for Effective Treatment (Literature Review)"
25. Kara Rodgers and Fu-Cheng Liang (2024) **Poster presentation**, MSU 22nd Undergraduate Research and Creative Activity Forum, "Membrane Protein Chaperone Modulates the Kinetics and Morphology of Tau Aggregation: A Potential Treatment for Alzheimer's disease"
26. Andrew Vann and Fu-Cheng Liang (2024) **Oral presentation**, MSU 22nd Undergraduate Research and Creative Activity Forum, "Leveraging membrane protein chaperones to mitigate familial mutant amyloid beta aggregation: Prospective therapeutic approach for early-onset Alzheimer's disease"
27. Kara Rodgers and Fu-Cheng Liang (2024) **Poster presentation**, 8th Annual Symposium on Brain Health at Texas Tech HSC, "Membrane Protein Chaperone Modulates the Kinetics and Morphology of Tau Aggregation: A Potential Treatment for Alzheimer's disease"
28. Andrew Vann and Fu-Cheng Liang (2024) **Poster presentation**, 8th Annual Symposium on Brain Health at Texas Tech HSC, "Leveraging membrane protein chaperones to mitigate

familial mutant amyloid beta aggregation: Prospective therapeutic approach for early-onset Alzheimer's disease"

29. Isabella Makelaar and Fu-Cheng Liang (2024) **Poster presentation**, 8th Annual Symposium on Brain Health at Texas Tech HSC, "Utilizing membrane protein chaperone to prevent and disrupt alpha synuclein protein aggregation in Parkinson's disease" (Best poster presentation award)
30. Connor Mitchell, and Fu-Cheng Liang (2024) **Poster Presentation,** Great Plains Honors Conference "Membrane Protein Chaperone Affects the Kinetics and Morphology of Amyloid Beta Aggregation" (Best poster presentation award)
31. Kara Rodgers and Fu-Cheng Liang (2024) **Poster presentation**, American Chemical Society (ACS) National Meeting in New Orleans "Membrane Protein Chaperone Modulates the Kinetics and Morphology of Tau Aggregation: A Potential Treatment for Alzheimer's disease"
32. Andrew Vann and Fu-Cheng Liang (2024) **Poster presentation**, American Chemical Society (ACS) National Meeting in New Orleans, "Leveraging membrane protein chaperones to mitigate familial mutant amyloid beta aggregation: Prospective therapeutic approach for early-onset Alzheimer's disease"
33. Abigail Matthew and Dr. Fu-Cheng Liang (2023) **Oral presentation**, MSU 21st Undergraduate Research and Creative Activity Forum, "Using Membrane Protein Chaperone to Prevent and Disrupt Familial Mutant of Alpha Synuclein Protein Aggregation in Parkinson's disease"
34. Abigail Guinan and Dr. Fu-Cheng Liang (2023) **Poster presentation**, MSU 21st Undergraduate Research and Creative Activity Forum, "Using Membrane Protein Chaperone to Disrupt the Alpha-Synuclein Protein Aggregation: A Potential Treatment for Parkinson's disease"
35. Kara Rodgers and Fu-Cheng Liang (2023) **Poster presentation**, American Chemical Society (ACS) Southwest Regional Meeting (SWRM), "Membrane Protein Chaperone Modulates the Kinetics and Morphology of Tau Aggregation: A Potential Treatment for Alzheimer's disease"
36. Andrew Vann and Fu-Cheng Liang (2023) **Poster presentation**, American Chemical Society (ACS) Southwest Regional Meeting (SWRM), "Leveraging membrane protein chaperones to mitigate familial mutant amyloid beta aggregation: Prospective therapeutic approach for early-onset Alzheimer's disease"
37. Isabella Makelaar and Fu-Cheng Liang (2023) **Poster presentation**, American Chemical Society (ACS) Southwest Regional Meeting (SWRM), "Utilizing membrane protein chaperone to prevent and disrupt alpha synuclein protein aggregation in Parkinson's disease"

38. George Liang (2023) **Oral Presentation**, UGROW workshop at Midwestern State University, "Principle and Hands-on Operations of Fluorescence Spectroscopy"
39. Abigail Matthew and Fu-Cheng Liang (2023) **Oral Presentation**, 18th Annual UGROW Symposium at Midwestern State University, "Membrane Protein Chaperone Prevents and Disrupts Alpha-Synuclein Protein Aggregation: A Potential Treatment For Parkinson's disease"
40. Hunter Ordner, Chris Sun, Connor Mitchell, Matthew Mitchell, and Fu-Cheng Liang (2023) **Poster Presentation,** 67th Biophysical Society Annual Meeting in San Diego "Membrane Protein Chaperone Affects the Kinetics and Morphology of Amyloid Beta Aggregation"
41. Kara Rodgers and Fu-Cheng Liang (2023) **Poster presentation**, MSU 20th Undergraduate Research & Creative Activity forum "Membrane Protein Chaperone Modulates the Kinetics and Morphology of Tau Aggregation: A Potential Treatment for Alzheimer's disease"
42. Abigail Guinan and Fu-Cheng Liang (2023) **Poster presentation**, MSU 20th Undergraduate Research & Creative Activity forum "Using Membrane Protein Chaperone to Prevent Familial Mutant of Alpha-Synuclein Protein Aggregation in Parkinson Disease"
43. Abigail Matthew and Fu-Cheng Liang (2023) **Oral presentation**, MSU 20th Undergraduate Research & Creative Activity forum "Using Membrane Protein Chaperone to Prevent Familial Mutant of Alpha-Synuclein Protein Aggregation in Parkinson Disease"
44. Abigail Matthew, Abigail Guinan and Fu-Cheng Liang (2022) **Poster presentation**, MSU 19th Undergraduate Research & Creative Activity forum "Using Membrane Protein Chaperone to Prevent Familial Mutant of Alpha-Synuclein Protein Aggregation in Parkinson Disease"
45. Connor Mitchell, and Fu-Cheng Liang (2022) **Poster Presentation,** MSU 19th Undergraduate Research & Creative Activity forum "Membrane Protein Chaperone Affects the Kinetics and Morphology of Amyloid Beta Aggregation"
46. Hunter Ordner, Chris Sun, Connor Mitchell, Matthew Mitchell, and Fu-Cheng Liang (2022) **Poster Presentation,** MSU celebration of scholarship "Membrane Protein Chaperone Affects the Kinetics and Morphology of Amyloid Beta Aggregation"
47. Viviana James, Leslie Cook, Isabella Makelaar, and Fu-Cheng Liang (2022) **Poster presentation**, MSU celebration of scholarship "Biophysical and Biochemical Characterization of a Familial Mutant of Alpha-Synuclein Protein in Parkinson Disease"
48. Hunter Ordner, Chris Sun, Connor Mitchell, Matthew Mitchell, George Liang (2022), **Poster Presentation,** 15th Annual Honors Program Symposium, "Membrane Protein Chaperone Affects the Kinetics and Morphology of Amyloid Beta Aggregation"

49. Hunter Ordner, Chris Sun, Connor Mitchell, Matthew Mitchell, and Fu-Cheng Liang (2022) **Poster Presentation,** Great Plains Honors Conference "Membrane Protein Chaperone Affects the Kinetics and Morphology of Amyloid Beta Aggregation"
50. Christopher Sun and Fu-Cheng Liang (2021) **Poster Presentation**, Midwest Regional Undergraduate Research, Scholarly and Creative Activity Conference "Applying Membrane Protein Chaperone as Therapeutics to Prevent Amyloid Beta Aggregation"
51. Christopher Sun and Fu-Cheng Liang (2021) **Poster Presentation**, National Conference on Undergraduate Research at home "Applying Membrane Protein Chaperone as Therapeutics to Prevent Amyloid Beta Aggregation"
52. Christopher Sun and Fu-Cheng Liang (2021) **Poster Presentation**, Virtual UGRCAF at Midwestern State University "Applying Membrane Protein Chaperone as Therapeutics to Prevent Amyloid Beta Aggregation" (First place in poster presentation)
53. Leah Slade and Fu-Cheng Liang (2020) **Poster Presentation**, Virtual UGRCAF at Midwestern State University "Concentration of Sodium Chloride Determines the Aggregation Kinetics and Morphology of Amyloid Beta"
54. Christopher Sun and Fu-Cheng Liang (2020) **Poster Presentation**, Virtual UGRCAF at Midwestern State University "Applying Membrane Protein Chaperone as Therapeutics to Prevent Amyloid Beta Aggregation"
55. Dianna Daniel, Blanca Turner, and George Liang (2020) **Oral Presentation**, UGROW Symposium at Midwestern State University " Utilizing Membrane Protein Chaperone to Prevent Amyloid Plaques and Neurofibrillary Tangle Formation in Alzheimer's Disease"
56. George Liang (2020) **Oral Presentation**, UGROW workshop at Midwestern State University " Principles of Fluorescence Spectroscopy and Protein Purification"
57. Shermali Ratnasinghe and George Liang (2020) **Poster Presentation**, Abilene Christian University virtual undergraduate research festival "Identification of Membrane Protein Chaperone as Therapeutics to Prevent Protein Aggregation of Alzheimer's disease"
58. Dianna Daniel, Ryan Smith and George Liang (2020) **Poster Presentation**, Virtual UGRCAF at Midwestern State University "Utilize Membrane Protein Chaperone as a Treatment to Ameliorate Tau Protein Aggregation"
59. Dirgha Vora, Porscha Weaver, George Liang and Jon Scales (2020) **Poster Presentation**, Virtual UGRCAF at Midwestern State University "Using Membrane Protein Chaperone to Rescue the Phenotype in a Fly model of Parkinson's disease"
60. Prisca Mbonu, Christopher Sun and Fu-Cheng Liang (2020) **Oral Presentation**, National Conference on Undergraduate Research in Bozeman, Montana (cancelled due to COVID19) "Applying Membrane Protein Chaperone as Therapeutics to Prevent Alzheimer's Disease"

61. Matthew Mitchell and Fu-Cheng Liang (2020) **Poster Presentation**, American Chemical Society National meeting in Philadelphia, PA (cancelled due to COVID19) "Applying Membrane Protein Chaperone as Therapeutics to Prevent Alzheimer's Disease"
62. Kameron Shrum and Fu-Cheng Liang (2020) **Poster Presentation**, American Chemical Society National meeting in Philadelphia (cancelled due to COVID19) "LTD Does Not Function as Membrane Protein Chaperone During Protein Targeting in Chloroplast"
63. George Fu-Cheng Liang, (2020) Invited **Oral Presentation**, Biophysics and Quantitative Biology conference and workshop at Midwestern State University entitled "Apply membrane protein chaperone as therapeutics to prevent Alzheimer's disease".
64. Shermali Ratnasinghe and George Liang (2019) **Poster Presentation**, UGRCAF at Midwestern State University "Utilize Membrane Protein Chaperone to Suppress the Amyloid Beta Aggregation" (First place in poster presentation)
65. Dianna Daniel and George Liang (2019) **Poster Presentation**, UGRCAF at Midwestern State University "Utilize Membrane Protein Chaperone as a Treatment to Ameliorate Tau Protein Aggregation" (Second place in poster presentation)
66. Fu-Cheng George Liang (2019) **Oral Presentation**, EURECA workshop at Midwestern State University "Directed Evolution to Improve Protein Folding in vivo"
67. Prisca Mbonu and George Liang (2019) **Oral Presentation**, UGRCAF at Midwestern State University "Directed Evolution of Membrane Protein Chaperone to Ameliorate Protein Aggregation-associated Disease"
68. Dolly Mombeyarara, Cheslin Maloney and George Liang (2019) **Oral Presentation**, UGRCAF at Midwestern State University " Applying Membrane Protein Chaperone as Therapeutics to Prevent Parkinson's Disease"
69. Prisca Mbonu, Christopher Sun and Fu-Cheng Liang (2019) **Oral Presentation**, UGRCAF at Midwestern State University "Applying Membrane Protein Chaperone as Therapeutics to Prevent Alzheimer's Disease"
70. Dolly Mombeyarara, Cheslin Maloney and George Liang (2019) **Oral Presentation**, UGROW Symposium at Midwestern State University " Applying Membrane Protein Chaperone as Therapeutics to Prevent Parkinson's Disease"
71. Prisca Mbonu, Christopher Sun and Fu-Cheng Liang (2019) **Oral Presentation**, UGROW Symposium at Midwestern State University "Applying Membrane Protein Chaperone as Therapeutics to Prevent Alzheimer's Disease" (First place in oral presentation)
72. Fu-Cheng George Liang (2019) **Oral Presentation**, UGROW workshop at Midwestern State University "Principle and Hands-on Operations of Fluorescence Spectroscopy"

73. Kameron Shrum, Tyler Jones and F.C. Liang (2019) **Poster Presentation**, Texas Undergraduate Research Day at the Capital "Deciphering the Mechanism of Protein Targeting Machinery in Chloroplasts"
74. CUR TURCC institute conference, Capital University, Columbus, OH (2018)
75. Kameron Shrum, Tyler Jones and F.C. Liang (2018) **Poster Presentation**, Undergraduate Research and Creative activity Forum at Midwestern State University "Deciphering the Mechanism of Protein Targeting Machinery in Chloroplasts" (First place in poster presentation)
76. Fu-Cheng George Liang (2018) **Oral Presentation**, UGROW workshop at Midwestern State University "Using Biochemical and Biophysical Approach to Study the Dynamics of Membrane Protein Chaperone"
77. F.C. Liang, Gerard J. Kroon, Camille McAvoy, Chris Chi, Peter Wright and Shu-ou (2017) **Oral Presentation**, *22nd Biophysics Conference* in I-Shou University, Kaohsiung, Taiwan "Conformational Dynamics of a Membrane Protein Chaperone Enables Spatially-regulated Substrate Capture and Release"
78. F.C. Liang, Gerard J. Kroon, Camille McAvoy, Chris Chi, Peter Wright and Shu-ou (2016) **Oral Presentation**, Institute of biological chemistry, Academia Sinica, Taiwan "Conformational Dynamics of a Membrane Protein Chaperone Enables Spatially-regulated Substrate Capture and Release"
79. F.C. Liang, Gerard J. Kroon, Camille McAvoy, Chris Chi, Peter Wright and Shu-ou (2016) **Oral and Poster Presentation**, *Gordon Research Conference -Protein transport Across Cell Membranes* in Galveston, TX, USA "Conformational Dynamics of a Membrane Protein Chaperone Enables Spatially-regulated Substrate Capture and Release"
80. F.C. Liang, Camille McAvoy, Samantha Piszkiewicz, Gerard J. Kroon, Maria Yamout, Peter Wright and Shu-ou (2015) **Poster Presentation**, *Biophysical Society 59th Annual Meeting* in Baltimore, MD. "Inter-domain Dynamics of a Novel Chaperone Enables Effective Capture of Membrane Protein Substrates"
81. F.C. Liang, U. Bageshwar, S. M. Musser (2012) **Poster Presentation**, *Gordon Research Conferences -Protein transport Across Cell Membranes* in Galveston, TX, USA "Position-dependent Effects of Polylysine on Sec Protein Transport."
82. F.C. Liang, U. Bageshwar, S. M. Musser (2010) **Poster Presentation**, *Gordon Research Conferences -Protein transport Across Cell Membranes* in Galveston, TX, USA "Bacterial Sec Protein Transport is Rated-limiting by Precursor Length: A Single Turnover Study."
83. F.C. Liang, U. Bageshwar, and S. M. Musser (2009) **Poster Presentation**, *Biophysical Society 53th Annual Meeting* in Boston, MA. "Bacterial Sec Protein Transport is Rated-limiting by Precursor Length: A Single Turnover Study."

84. F.C. Liang, U. Bageshwar, and S. M. Musser (2008) **Oral Presentation**, *13th Annual Student Research Symposium* in College of Medicine Texas A&M Health Science Center, College Station, TX. "Single-turnover Transport Kinetics for the Sec Translocon Demonstrates a Single Rate-limiting Step that is Dependent on Precursor Length."
85. F.C. Liang, U. Bageshwar, W. Yang and S. M. Musser (2007) **Poster Presentation**, *12th Annual Student Research Symposium* in College of Medicine Texas A&M Health Science Center, College Station, TX. "Single-turnover Transport Kinetics for the Sec Translocon Demonstrates a Single Rate-limiting Step that is Dependent on Precursor Length."
86. S. M. Musser, F.C. Liang, U. Bageshwar, W. Yang (2005) **Poster Presentation**, *Gordon Research Conferences -Protein transport Across Cell Membranes* meeting in Colby-Sawyer College, New London, NH, USA "Real-time Sec Protein Transport under Single Turnover Conditions."
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