

Curriculum Vitae (updated 20250601)

Ming-Daw Tsai (蔡明道), Ph.D.

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Education

1968-1972, B.S. in Chemistry, National Taiwan University, Taipei
(1972-1974 in compulsory military service)
1974-1978, Ph.D. in Biochemistry & Medicinal Chemistry, Purdue Univ. (Heinz Floss)

Positions Held

2020 Oct -	present	Distinguished Visiting Chair (客座講座), IBC, AS
2020 Oct -	present	Distinguished Research Chair Professor (特聘研究講座教授), Institute of Biochemical Sciences, National Taiwan Univ.
2007 Aug -	2020 Sept	Professor, Institute of Biochemical Sciences, National Taiwan Univ.
2006 Oct -	2020 Sept	Distinguished Research Fellow, Institute of Biological Chemistry, Academia Sinica
2008 Aug -	2014 Aug	Director, Institute of Biological Chemistry, Academia Sinica
2007 Feb -	2014	Director, CBMB Program, Taiwan International Graduate Program
2006 Oct -	2008 Aug	Acting Director, Institute of Biological Chemistry, Academia Sinica
2005 Jan -	2008 Aug	Director of Functional Genomics, GRC
2004 Jan -	2010 Dec	Director, National Core Facilities Office, NRPGM
2003 Nov -	2008 Aug	Distinguished Research Fellow, Genomics Research Center Academia Sinica, Taiwan
2003 Oct -	2007 June	Kimberly Professor of Chemistry, Ohio State University
1993 Oct -	2007 June	Director, Office of Research Campus Chemical Instrument Ctr, OSU
1992 Jan -	2007 June	Professor, Department of Biochemistry, OSU
1990 Oct -	2007 June	Professor, Department of Chemistry, OSU
1995 Sept -	2003 July	Director, Chemistry/Biology Interface Training Program, OSU
1986 Oct -	1990 Sept	Associate Professor of Chemistry, Ohio State University
1989 Aug -	1990 June	Visiting Professor, Dept. of Biochemistry, University of Wisconsin, Madison (with John Markley)
1986 Mar -	1986 Sept.	Visiting Professor, University of Lund, Sweden (with Sture Forsen)
1981 July -	1986 Sept	Assistant Professor of Chemistry, Ohio State University
1980 July -	1981 July	Assistant Prof of Chemistry, Rutgers Univ. (Newark)
1980 July -	1980 Dec	Research Associate, University of Illinois (with Eric Oldfield)
1979 July -	1980 Dec	Visiting Assistant Professor, Medicinal Chemistry, Purdue Univ.
1978 Jan -	1979 June	Postdoctoral Associate, Purdue University (with H. G. Floss)

Research Interest

Mechanism of Action of Enzymes Involving Biophosphates
Mechanism of DNA polymerases involved in DNA repair
DNA photolyase
Structure and Function of FHA domains in DNA damage signaling
Roles of TIFA in inflammation and innate immunity
Chemical and structural biology
Biological NMR / X-ray crystallography / Cryo-EM
X-ray free electron laser (XFEL)
Time-resolved XFEL and cryo-EM

Honors/Awards

1. Glenn L. Jenkins Award for Excellence in Research, Purdue Univ., 1977.
2. Alfred P. Sloan Fellow, 1983-1985
3. Faculty Research Award, Ohio State Chapter of Sigma Xi, 1985.
4. Camille and Henry Dreyfus Teacher-Scholar, 1985-1990.
5. Distinguished Scholar Award, Ohio State University, 1992.
6. Elected Fellow, American Association for the Advancement of Science (AAAS), 1992.
7. Committee on Institutional Cooperation (CIC) Academic Leadership Program Fellow, 2002-2003.
8. Kimberly Professor of Chemistry, Ohio State University, 2003-2007.
9. Guest Professor, Tsinghua University, PRC, 2003-2006.
10. Distinguished Alumnus Award, Purdue University School of Pharmacy, 2008.
11. Academician, Academia Sinica, elected 2012.
12. Fellow, The World Academy of Science (TWAS), elected 2014.
13. Who Is Who of Taiwan in Biotechnology and Medicine 2020.
14. Yen Kwo-Yung Lecturer in Life Sciences, Chinese University of Hong Kong, 2023

Special Professional Services

1. Symposium Organizer, "Quadrupolar NMR in Biophysical Chemistry", ACS 18th Central Regional Meeting, Bowling Green, June 4, 1986.
2. Co-Chairperson, 8th Midwest Enzyme Chemistry Conference, October, 1988.
3. NIH Physical Biochemistry Study Section Member, 1988-92.
4. Co-chair, Gordon Conference on Enzymes, July 1993.
5. Board Member, Chinese American Chemical Society, 1993-96.
6. Co-founder, Ohio NMR Consortium, 1995.
7. Nominating Committee, American Chemical Society Division of Biological Chemistry, 1997.
8. NIH Training Grant Study Section, 1997-01.
9. Symposium Organizer, "NMR of Biological Macromolecules". 31st Central Regional Meeting of the American Chemical Society, June 21-23, 1999.
10. Advisory Board, Institute of Chemistry, Academia Sinica, Taiwan, 1991-2010.
11. President, Chinese American Chemical Society, 2003.
12. Organizer, Frontiers of Bioorganic and Natural Product Chemistry Symposium, Seattle, August 26-29, 2004.

13. Board of Consulting Editors, Bioorganic & Medicinal Chemistry, 1998-2006.
14. Board of Consulting Editors, Bioorganic & Medicinal Chemistry Letters, 1998-2006.
15. Theme Editor, Current Opinions in Chemical Biology, Volume 7, April 2003.
16. Cancer PPG Special Study Section, National Cancer Institute, NIH, October 2-3, 2007.
17. Program Chair, International Society for Magnetic Resonance Conference (ISMAR), Kenting, Taiwan, Oct 14-19, 2007.
18. President, Taiwan Magnetic Resonance Society, 2007 – 2010. 臺灣磁共振學會第二屆理事長，第一屆監事，第三、五、六屆理事
19. Editorial Advisory Board for Biochemistry, January 2009 – 2010 and 2017 – 2018.
20. International Liason for the Symposium of SCBA, 2009.
21. President, Taiwan Society of Biochemistry and Molecular Biology, 2009-2012.
22. Associate Editor, Biochemistry, 2010 – 2016.
23. President, Taiwan Biophysical Society, 2013 – 2016.
24. President, Taiwan Proteomics Society, 2014 – 2017.
25. STRENDA (Standards in Reporting Enzyme Data) Commission, Beilstein Institute of Germany, 2014-2025.
26. Visiting Committee for School of Life Sciences, Chinese University of Hong Kong, July 2014.
27. Co-chair, Organizing Committee, International Union of Biochemistry and Molecular Biology (IUBMB), 2014 Conference, Taipei.
28. Chair, Organizing Committee, NMR in Biomolecular Structures, PacifiChem 2015, Hawaii.
29. Chair, Organizing Committee, Human Proteome Organization (HUPO) 2016 Congress, Taipei.
30. Director, Taiwan Protein Project, 2016-2020.
31. 臺大分子生醫影像研究中心諮詢委員, Advisory Board member, NTU Molecular Imaging Center, 2017-2020.
32. Director, Academia Sinica Cryo-EM Center (ASCEM), 2018 – 2020.
33. Chair, Organizing Committee, Cryo-EM in Enzymology and Dynamics, PacifiChem 2025, Hawaii.

Mentoring of Graduate Students and Postdoctors

I have trained ca. 60 Ph. D. graduates and ca. 60 postdoctors. A number of former students and former postdoctors have taken faculty positions in academic institutions in the U. S. and Taiwan, as listed below:

1. Yund-Jung (John) Shyy, Ph. D. 1987 (Chemistry), Professor, Department of Bioengineering, University of California at San Diego.
2. Charles R. Sanders, Ph. D. 1988 (Chemistry), Professor, Dept. of Biochemistry and Biophysics, Vanderbilt University School of Medicine.
3. Tsung-Chung (Alan) Tsai, postdoctor 1982-85, Professor (retired), Tunghai Univ, Taiwan.
4. William M. Loffredo, Ph. D. 1988 (Chemistry), Professor, Dept. of Chemistry, East Strasburg University, Pennsylvania.

5. Gialih (Hoffman) Lin, Ph. D. 1989 (Chemistry), Professor of Chemistry, Chung-Hsing U., Taiwan.
6. Joseph P. Noel, Ph. D. in 1990 (Chemistry), Professor, SALK Institute and Dept. of Chemistry, University of California at San Diego.
7. Honggao Yan, Ph. D. 1991 (OSBP), Professor, Dept. of Biochemistry, Michigan State University.
8. Karol Bruzik, former postdoctor, Professor, Dept. of Medicinal Chemistry, University of Illinois at Chicago.
9. Cynthia M. Dupureur (Chemistry), Ph. D. 1992, Associate Professor, Dept. of Chemistry and Biochemistry, University of Missouri, St Louis.
10. Robert Hondal, Ph. D. 1997 (Chemistry), Assistant Professor, Department of Biochemistry, University of Vermont.
11. In-Ja L. Byeon, Senior NMR Research Scientist, Department of Structural Biology, University of Pittsburgh School of Medicine.
12. Karen Ericson, Ph. D. 1998 (Chemistry), Assistant Professor at Indiana University-Purdue University Fort Wayne.
13. Thomas Selby, Ph. D. 1999 (Chemistry), Assistant Professor, Central Florida State University.
14. Junan Li, Ph. D. 2000 (Biochemistry), Postdoctor 2002-2005, Assistant Professor, College of Public Health, OSU, 2007.
15. Paul O'Maille, Ph. D. 2001, Assistant Professor, Department of Metabolic Biology, John Innes Centre (JIC) Plant Natural Products and Health, Institute of Food Research (IFR) Colney Lane, Norwich NR4 7UH, UK.
16. Kuo-Hsiang Joseph Tang, Postdoctor, Assistant Professor, Department of Chemistry and Biochemistry, Clarkson University, Potsdam, New York.
17. Yi Guo, Ph. D. 2009 (OSBP), Assistant Professor (2012 – present), Department of Health Outcomes and Policy, College of Medicine, University of Florida, Gainesville, FL
18. Jinwoo Ahn, Assistant Professor (2012 – present), Dept of Structural Biology, University of Pittsburgh, PA.
19. Hyun Lee, Research Assistant Professor, Department of Medicinal Chemistry & Pharmacognosy, Univ of Illinois at Chicago, Illinois.
20. Xiaoxia Liu (postdoctor 2011-13), Associate Researcher, Department of Pathophysiology, Shanghai Jiao Tong University School of Medicine (since 2018). 留筱霞 博士 副研究员, 上海交大医学院 基础医学院 病理生理学系
21. Yu-Fang Shen (沈育芳), Associate Professor (2017 – present), 亞洲大學生物與醫學資訊學系, Bioinformatics and Medical Engineering, Asia University
22. Pang-Hung Hsu (許邦弘), Professor, Dept of Bioscience and Biotechnology, National Taiwan Ocean University.
23. Manuel Maestre-Reyna, Assistant Professor, Department of Chemistry, National Taiwan University (2022).
24. Chiung-Wen (Mary) Chang, Assistant Professor, China Medical University (2024).

Professional Membership

American Chemical Society (USA)

American Society of Biochemistry and Molecular Biology (USA)

American Association for the Advancement of Science (Elected Fellow in 1992) (USA)

Taiwan Biophysical Society
Taiwan Magnetic Resonance Society
Taiwan Society of Biochemistry and Molecular Biology

Training Grants (as Principal Investigator/Program Director)

1. "Chemistry/Biology Interface Training Grant", NIH, T32 GM 08512, 7/1/96-6/30/01, annual direct cost ca. \$300,000; renewed for 7/1/01-6/30/06. (Dr. Dehua Pei took over the directorship and the PI starting 7/1/03).

Equipment Grants (as Principal Investigator only; co-PI of many other proposals.)

1. "Purchase of a 600 MHz NMR Spectrometer", \$200,000, NIH, RR 08299, 8/15/93-8/14/94.
2. "Purchase of a 600 MHz NMR Spectrometer", \$200,000, NSF, BIR-9221639, 6/1/93-5/31/95.
3. "500 MHz Console Upgrade", \$258,000, NSF, 5/96.
4. "800 MHz NMR", \$1,870,000, Ohio Board of Regents, 4/96.
5. "Ohio NMR Consortium", \$2,000,000, Ohio Board of Regents (the funding is distributed among several universities in Ohio; Tsai serve as PI of the Consortium proposal), June 2002.

Past Research Grants (as Principal Investigator)

1. "Stereochemistry of Enzyme Reactions Involving a Propochiral Phosphorus Center". (NSF) 8/1/79 - 7/31/82, Total cost: \$108,000.
2. "¹⁷O and ³¹P NMR of Biophosphates". (NIH) GM 29041, 8/1/82 - 11/30/85, Direct cost: \$182,545.
3. Research Award, A. P. Sloan Foundation, 9/15/83 - 9/14/85, Total cost: \$25,000.
4. Dreyfus Teacher-Scholar Award, 12/1/85 - 11/30/90, Direct Cost: \$47,000, Total cost: \$50,000.
5. "Productive Versus Nonproductive Binding of Kinases". (NSF) DMB-8603553, 9/86 - 8/89, Total Cost: \$232,133.
6. "Mechanism of Adenylate Kinase". (NSF) DMB 89-04727, 3/90-2/93, Total Cost: \$285,000.
7. "The Role of Aspartate in the Catalytic Diad". NIH, F32 GM15973, 12/93 - 11/96, direct cost \$72,900. (Postdoctoral Fellowship to Brian Werneburg).
8. "Stereochemistry of Enzyme Reactions at Phosphorus", NIH, GM30327, 7/79 – 11/93, final year direct cost \$112,585.
9. "Mechanism of Inositide-Related Enzymes", NIH, GM30327, 12/93 - 11/97, final year direct cost \$137,578. This was continuation of GM30327 with a change of title.
10. "Mechanism of p19ARF – Bridging Two Major Tumor Suppression Pathways", PI, a grant from American Cancer Society through Comprehensive Cancer Center, \$35,000 from 7/1/98 to 6/30/99.
11. "Mechanism of Adenylate Kinase". NIH, GM43268, 8/92 – 7/96, final year (year 04) direct cost \$155,357.

12. "Mechanism of Phospholipase A2". NIH, GM41788, 4/89 – 3/01, final year (year 12) direct cost \$153,514.
13. "Structure Function of FHA Domain in Signaling and Cancer". NIH, CA87031, 3/1/01-2/28/05 (four years), final year direct cost \$157,000.
14. "Conformational Changes in Phospholipase C", NIH, GM57568, 12/98-12/08. This is continuation of GM30327. K. Bruzik became the PI of this grant. My share is ca. \$50K/year direct cost.
15. "Mechanism of DNA Polymerases". NIH GM43268, 12/97 – 6/06, final year (year 12) direct cost \$222,300.
16. "Functional Genomics Approach to the Virulence of Klebsiella pneumonia". AS, 94F008-1, PI, 1/05-12/07, current year cost \$NT3,000,000.
17. "Functional and Genomic Studies of Capsular synthesis Region of Tissue Invasive Klebsiella pneumoniae". NSC, 95-3112-B-001 -021-, PI, 08/06-07/07, current year total cost \$NT2,500,000.
18. "Structure-Function Relationship of Tumor Suppressors". NIH, CA69472, PI, 6/00-6/09, final year total cost \$292,000.
19. "Mechanism of Catalysis by the RNA Polymerase of Avian Flu Virus". NSC, 95-2745-B-001 -004-, PI, 08/06-07/09, total cost \$NT7,500,000.
20. "Enzymes in the biosynthesis of the capsular polysaccharide of Klebsiella pneumoniae". NSC, 98-3112-B-001 -003-, PI, 05/07-04/10, current year cost \$NT5,950,000, total cost \$NT18,331,000. Extended to 04/11.
21. "Protein-Phosphoprotein Interaction in Cancer-related Signaling". NHRI, EX95-9508NI, PI, 1/06-12/10, current year total cost \$NT2,355,000.

22. Academia Sinica Investigator Award, Academia Sinica

計畫編號: 100-深耕計畫-11

補助期限: 2011-1-1~2015-12-31

Research Theme:

Mechanism of biophosphates: from DNA repair polymerases to DNA damage signaling

生物磷酸鹽之反應機制：從DNA修復聚合酶到DNA損害之訊息傳遞

每一年度金額: 2,000,000

23. NHRI

計畫編號: NHRI-EX100-10002NI

補助期限: 2011-1-1~2015-12-31

Research Theme:

Protein-Phosphoprotein Interaction in Cancer related Signaling

蛋白質與磷酸化蛋白質的相互作用在癌症信號傳導中的功能研究

每一年度金額: 1,600,000

24. Academia Sinica Thematic Project

計畫編號: AS-101-TP-B02

補助期限: 2012-1-1~2014-12-31

Research Theme:

Roles of NIFK in Cancer (NIFK與癌症之關聯)

B02-2NIFK: Roles of NIFK phosphorylation and its binding with Ki67 in the cancer relevance
NIFK磷酸化及其與Ki67連結與癌症之關聯
每一年度計畫總金額: 8,000,000

25. MOST

計畫編號: 103-2113-M-001 -016 -MY3

補助期限: 2014-8-1~2017-7-31

Research Theme: How low-fidelity DNA polymerases catalyze non-Watson-Crick incorporation

低準確度DNA複製酶如何催化非Watson-Crick鹼對

每一年度金額: 2,500,000

26. 2015 Academia Sinica Thematic Project

計畫編號: AS-104-TP-B05

補助期限: 2015-1-1~2017-12-31

Research Theme: Structure and mechanism of protein-phosphoprotein interaction and PTM crosstalk

(蛋白質與磷酸化蛋白質交互作用及後修飾交叉感應之結構與機制)

每一年度計畫總金額: 9,255,000 NTD for three subprojects

27. 2016 行政院部會署政策額度計畫

計畫編號: MOST105-0210-01-12-01, MOST106-0210-01-15-04, and MOST107-0210-01-19-02

補助期限: 2016-1-1 to 2019-12-31

打造世界級蛋白質研發重鎮: 開創次世代生技產業

Budget: 170,000,000 (2016) ; 138,000,000 (2017) ; 128,000,000 (2018); 105,000,000 (2019)

28. 2020 行政院部會署政策額度計畫

計畫編號: AS-KPQ-109-TPP2

補助期限: 2020-1-1 to 2023-12-31

開創次世代生技產業 (TPP2)

Budget: 65,297,000 (2020, PI); 40,000,000 (2021, co-PI); 34,000,000 (2022, co-PI), 30,000.000 (2023, co-PI).

Active Research Grants

2023 National Science and Technology Council

Title: Taiwan Cryo-EM Consortium

Grant no: NSTC 112-2740-B-006-001 (Role: Co-PI)

Grant period: 2023-5-1 to 2024-4-30

Budget: 7,000,000 (2023); 8,500,000 (2024)

Activities after Oct 1, 2020 (mandatory retirement)

- 2020-2022 Advisory Board,「國立臺灣大學分子生醫影像研究中心」(Molecular Imaging Center) (陳賢燁主任)
- 2020-current 某單位學術倫理委員會.
- Organizing Committee, NMR in Biomolecular Structures, PacifiChem 2020, Hawaii.
- Steering Committee, Academia Sinica Cryo-EM Facility (ASCEM), 2021 – 2022.
- Organizing Committee, Beilstein Enzymology Symposium, Sept 20-21, 2021.
- Advisory Board, IUBMB Life, 2021-2023.
- 財團法人國家同步輻射研究中心特聘研究員審議委員會, 任期自111年3月1日起至114年2月28日止, 為期三年。
- 中央研究院「院聘任資格審查委員會」委員。本屆委員任期自112年10月1日起至114年9月30日止, 為期2年。
- Organizing Committee, Heinz G. Floss Symposium in Chemical Biology, University of Washington, Seattle, August 27, 2023.
- Chair of Organizing Committee, Cryo-EM in Enzymology and Dynamics, PacifiChem 2025, Hawaii.

Publications

Total 308 papers; 38 in *JACS*; 97 in *Biochemistry*.

Google Citation : [Ming-Daw Tsai - Google Scholar](#) H index 65 ; i10 index 256

1. "Terpenes and Sterols of *Cunninghamia Konishii*," Y. S. Cheng and M.-D. Tsai, *Phytochemistry*, *11*, 2108-2109 (1972).
2. "Air Oxidation of α -Terpineol," M.-D. Tsai and Y. S. Cheng, *J. Chinese Chem. Soc.*, *22*, 149-155 (1974).
3. "Dye-sensitized Photooxidation of α -Terpineol," Y. S. Cheng, M.-D. Tsai, J. M. Fang and S. S. Hsu, *Chemistry* (The Chinese Chem. Soc., Taiwan, China), 8-11 (1975).
4. "Conformational Analysis of Pyridoxal Amino Acid Schiff's Bases," H. J. R. Weintraub, M.-D. Tsai, S. R. Byrn, C.-j. Chang and H. G. Floss, *Int. J. Quantum Chem.*, QBS 3, 99-105 (1976).
5. "Conformational Analysis of Pyridoxal Schiff's Bases. Nuclear magnetic resonance studies of the conformations about the C4-C4', C α -C β , and N-C α bonds of the pyridoxal Schiff's bases of amino acids." M.-D. Tsai, S. R. Byrn, C.-j. Chang, H. G. Floss and H. J. R. Weintraub, *Biochemistry* *17*, 3177-3182 (1978).
6. "Conformation-Reactivity Relationship for Pyridoxal Schiff's Bases. Rates of racemization and alpha-hydrogen exchange of the pyridoxal Schiff's bases of amino acids." M.-D. Tsai, H. J. R. Weintraub, S. R. Byrn, C.-j. Chang and H. G. Floss, *Biochemistry*, *17*, 3183-3188 (1978).
7. "Stereochemistry and Mechanism of Reactions Catalyzed by Tryptophan Synthetase and its β 2 Subunit, M.-D. Tsai, E. Schleicher, R. Potts, G. E. Skye and H. G. Floss, *J. Biol. Chem.*, *253*, 5344-5349 (1978).
8. "Stereochemistry and Mechanism of Reactions Catalyzed by Tryptophanase from *Escherichia coli*, J. C. Vederas, E. Schleicher, M.-D. Tsai and H. G. Floss, *J. Biol. Chem.*, *253*, 5350-5354 (1978).
9. "Stereochemistry of the β -Cyanoalanine Synthetase and S-Alkylcysteine Lyase Reactions," M.-D. Tsai, J. Weaver, H. G. Floss, E. E. Conn, R. K. Creveling and M. Mazelis, *Arch. Biochem. Biophys.*, *190*, 553-559 (1978).

10. "Stereochemistry of Enzymatic Transmethylation," H. G. Floss, L. Mascaro, M.-D. Tsai and R. W. Woodard, in *Transmethylation* (E. Usin, R. T. Borchardt and C. R. Creveling, Eds.), Elsevier North-Holland, New York (1979), pp. 135-141. (Review)
11. "Chiral Methyl Groups," H. G. Floss and M.-D. Tsai, *Adv. Enzymol.* **50**, 243-302 (1979). (Review)
12. "Stereochemistry and Mechanism of Reactions Catalyzed by Indolyl-3-alkane α -Hydroxylase," M.-D. Tsai, H. G. Floss, H. J. Rosenfeld and J. Roberts, *J. Biol. Chem.*, **254**, 6437-6443 (1979).
13. "Stereochemical Course of the Transmethylation Catalyzed by Catechol O-Methyltransferase," R. W. Woodard, M.-D. Tsai, H. G. Floss, P. A. Cook and J. K. Coward, *J. Biol. Chem.*, **255**, 9124-9127 (1980).
14. "First Observation of Amino Acid Side Chain Dynamics in Membrane Proteins Using High Field Deuterium NMR Spectroscopy," R. A. Kinsey, A. Kintanar, M.-D. Tsai, R. L. Smith, N. Janes and E. Oldfield, *J. Biol. Chem.*, **256**, 4146-4149 (1981).
15. "Protein Crystals, Membrane Proteins and Membrane Lipids." E. Oldfield, N. James, R. Kinsey, A. Kintanar, R. W. K. Lee, T. M. Rotngeb, S. Schramm, R. Skarjune, R. Smith and M.-D. Tsai, *Biochem. Soc. Trans.*, **45**, 155-181 (1981).

Papers from independent research:

16. "Use of ^{31}P Nuclear Magnetic Resonance to Distinguish Bridge and Nonbridge Oxygens of ^{17}O -enriched Nucleoside Triphosphates. Stereochemistry of Acetate Activation by Acetyl CoA Synthetase," M.-D. Tsai, *Biochemistry* **18**, 1468-1472 (1979). (This and a few subsequent papers were highlighted in Science 1984 in pdf.)
17. "Applicability of the $^{31}\text{P}(^{17}\text{O})$ NMR Method in the Study of Enzyme Mechanism Involving Phosphorus," M.-D. Tsai, S. L. Huang, J. F. Kozlowski and C. C. Chang, *Biochemistry* **19**, 3531-3536 (1980).
18. "Chirality at a Pro-pro-prochiral Phosphorus Center, Stereochemical Course of the 5'-Nucleotidase-Catalyzed Reaction," M.-D. Tsai and T. T. Chang, *J. Am. Chem. Soc.*, **102**, 5416-5418 (1980).
19. "Stereochemistry of the Hydrolysis of Adenosine 5'-Thiophosphate Catalyzed by Venom 5'-Nucleotidase," M.-D. Tsai, *Biochemistry* **19**, 5310-5316 (1980).
20. "Does the Magnesium(II) Ion Interact with the α -Phosphate of ATP? An Investigation by ^{17}O NMR," S.-L. Huang and M.-D. Tsai, *Biochemistry* **21**, 951-959 (1982).
21. "Use of $^{31}\text{P}(^{18}\text{O})$, $^{31}\text{P}(^{17}\text{O})$, and ^{17}O NMR Methods to Study Enzyme Mechanism Involving Phosphorus," M.-D. Tsai, *Methods Enzymol.* **87**, 235-279 (1982). (Review)

22. "Phospholipids Chiral at Phosphorus. 1. Stereochemistry of Transphosphatidylation Catalyzed by Phospholipase D," K. Bruzik and M.-D. Tsai, *J. Am. Chem. Soc.* **104**, 863-865 (1982).
23. "Phospholipids Chiral at Phosphorus. 2. Preparation, Property, and Application of Chiral Thiophospholipids" K. Bruzik, S. M. Gupte and M.-D. Tsai, *J. Am. Chem. Soc.* **104**, 4682-4684 (1982).
24. "Phospholipids Chiral at Phosphorus. 3. Preparation and Spectral Properties of Chiral Thiophospholipids," K. Bruzik, R.-T. Jiang and M.-D. Tsai, *Biochemistry* **22**, 2478-2486 (1983).
25. "Phospholipids Chiral at Phosphorus. 4. Could Membranes be Chiral at Phosphorus?" M.-D. Tsai, R.-T. Jiang and K. Bruzik, *J. Am. Chem. Soc.* **105**, 2478-2480 (1983)
26. "Phospholipids Chiral at Phosphorus. Synthesis, Absolute Configurations and Applications." K. Bruzik, R.-T. Jiang and M.-D. Tsai, *Phosphorus and Sulfur* **18**, 369-372 (1983).
27. "Effects of ^{17}O and ^{18}O on ^{31}P NMR: Further Investigation and Applications," R. D. Sammons, P. A. Frey, K. Bruzik and M.-D. Tsai, *J. Am. Chem. Soc.* **105**, 5455-5461 (1983).
– This paper was featured in an one-page news article in *Science* **224**, 377 (1984).
28. "NMR Methods Involving Oxygen Isotopes in Biophosphates," M.-D. Tsai and K. Bruzik, in *Biological Magnetic Resonance*, Vol. 5, L. J. Berliner and J. Reuben, Eds., Plenum Press, New York, pp. 129-181 (1983). (Review)
29. "Phospholipids Chiral at Phosphorus. 5. Synthesis and Configurational Analysis of Chiral [^{17}O , ^{18}O]-Phosphatidylethanolamine." K. Bruzik and M.-D. Tsai, *J. Am. Chem. Soc.* **106**, 747-754 (1984).
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295. "TIFA Protein Expression is Associated with Pulmonary Arterial Hypertension". Hao-Chih Chang, Tong-You Wade Wei, Pei-Yu Wu, Ming-Daw Tsai, Wen-Chung Yu, Chen-Huan Chen, Shih-Hsien Sung. *Scientific Reports*, 11(1), 14140 (2021).

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297. "Evidence for an Enzyme-Catalyzed Rauhut–Currier Reaction during the Biosynthesis of Spinosyn A". Sei-hyun Choi, Byungsun Jeon, Namho Kim, Hsin-Hui Wu, Tzu-Ping Ko, Mark W Ruszczycky, Eta A Isiorho, Yung-nan Liu, Adrian T Keatinge-Clay, Ming-Daw Tsai, Hung-wen Liu. *J. Am. Chem. Soc.* 143(48), 20291-20295 (2021). doi.org/10.1021/jacs.1c09482
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299. "Serial crystallography captures dynamic control of sequential electron and proton transfer events in a flavoenzyme", Manuel Maestre-Reyna, Cheng-Han Yang, Eriko Nango, Wei-Cheng Huang, Eka Putra Gusti Ngurah Putu, Wen-Jin Wu, Po-Hsun Wang, Sophie Franz-Badur, Martin Saft, Hans-Joachim Emmerich, Hsiang-Yi Wu, Cheng-Chung Lee, Kai-Fa Huang, Yao-Kai Chang, Jiahn-Haur Liao, Jui-Hung Weng, Wael Gad, Chiung-Wen Chang, Allan H. Pang, Michihiro Sugahara, Shigeki Owada, Yuhei Hosokawa, Yasumasa Joti, Ayumi Yamashita, Rie Tanaka, Tomoyuki Tanaka, Fangjia Luo, Kensuke Tono, Kai-Cheng Hsu, Stephan Kiontke, Igor Schapiro, Roberta Spadaccini, Antoine Royant, Junpei Yamamoto, So Iwata, Lars-Oliver Essen*, Yoshitaka Bessho*, Ming-Daw Tsai*. *Nature Chemistry*, 14(6), 677-685 (2022). DOI: 10.1038/s41557-022-00922-3. URL: <https://www.nature.com/articles/s41557-022-00922-3> Report: [In Other Journals | Science](#)
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302. "Visualizing the DNA repair process by a photolyase at atomic resolution". Manuel Maestre-Reyna*, Po-Hsun Wang, Eriko Nango, Yuhei Hosokawa, Martin Saft, Antonia Furrer, Cheng-Han Yang, Eka Putra Gusti Ngurah Putu, Wen-Jin Wu, Hans-Joachim Emmerich, Nicolas Caramello, Sophie Franz-Badur, Chao Yang, Sylvain Engilberge, Maximilian Wranik, Hannah Louise Glover, Tobias Weinert, Hsiang-Yi Wu, Cheng-Chung Lee, Wei-Cheng Huang, Kai-Fa Huang, Yao-Kai Chang, Jiahn-Haur Liao, Jui-Hung Weng, Wael Gad, Chiung-Wen Chang, Allan H. Pang, Kai-Chun Yang, Wei-Ting Lin, Yu-Chen Chang, Dardan Gashi, Emma Beale, Dmitry Ozerov, Karol Nass, Gregor Knopp, Philip J. M. Johnson, Claudio Cirelli, Chris Milne, Camila Bacellar, Michihiro Sugahara, Shigeki Owada,

- Yasumasa Joti, Ayumi Yamashita, Rie Tanaka, Tomoyuki Tanaka, Fangjia Luo, Kensuke Tono, Wiktoria Zarzycka, Pavel Müller, Maisa Alkheder Alahmad, Filipp Bezold, Valerie Fuchs, Petra Gnau, Stephan Kiontke, Lukas Korf, Viktoria Reithofer, Christian Joshua Rosner, Elisa Marie Seiler, Mohamed Watad, Laura Werel, Roberta Spadaccini, Junpei Yamamoto, So Iwata, Dongping Zhong, Joerg Standfuss, Antoine Royant, Yoshitaka Bessho*, Lars-Oliver Essen*, Ming-Daw Tsai*. *Science* 382, eadd7795 (2023). DOI: 10.1126/science.add7795
303. “A structure of the relict phycobilisome from a thylakoid-free cyanobacterium”, Han-Wei Jiang, Hsiang-Yi Wu, Chun-Hsiung Wang, Cheng-Han Yang, Jui-Tse Ko, Han-Chen Ho, Ming-Daw Tsai, Donald A. Bryant, Fay-Wei Li, Meng-Chiao Ho*, Ming-Yang Ho*. *Nat. Commun.* 14, 8009 (2023). <https://doi.org/10.1038/s41467-023-43646-9>
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 306. “Capturing structural intermediates in an animal-like cryptochrome photoreceptor by time-resolved crystallography.” Manuel Maestre-Reyna*, Yuhei Hosokawa, Po-Hsun Wang, Martin Saft, Nicolas Caramello, Sylvain Engilberge, Sophie Franz-Badur, Eka Putra Gusti Ngurah Putu, Mai Nakamura, Wen-Jin Wu, Hsiang-Yi Wu, Cheng-Chung Le, Wei-Cheng Huang, Kai-Fa Huang, Yao-Kai Chang, Cheng-Han Yang, Wei-Ting Lin, Kai-Chun Yang, Yuki Ban, Tomoki Imura, Atsuo Kazuoka, Eisho Tanida, Shigeki Owada, Yasumasa Joti, Rie Tanaka, Tomoyuki Tanaka, Fangjia Luo, Kensuke Tono, Stephan Kiontke, Lukas Korf, Yasufumi Umena, Takehiko Tosha, Yoshitaka Bessho, Eriko Nango, So Iwata, Antoine Royant, Ming-Daw Tsai*, Junpei Yamamoto*, Lars-Oliver Essen*. *Sci. Adv.* 11, eadu7247 (2025). DOI: [10.1126/sciadv.adu7247](https://doi.org/10.1126/sciadv.adu7247)
 307. “Real-space heterogeneous reconstruction, refinement, and disentanglement of CryoEM conformational states with HetSIREN”. David Herreros*, Carlos Perez Mata, Chari Noddings, Deli Irene, James Krieger, David Agard, Ming-Daw Tsai, Carlos Óscar Sánchez-Sorzano, and José-Maria Carazo, *Nat. Commun.* [Paper #NCOMMS-24-61924B] (2025). DOI: 10.1038/s41467-025-59135-0; <https://rdcu.be/eilVV>
 308. “Redox-State-Dependent Structural Changes within a Prokaryotic 6–4 Photolyase”. Po-Hsun Wang, Yuhei Hosokawa, Jessica C Soares, Hans-Joachim Emmerich, Valeri Fuchs, Nicolas Caramello, Sylvain Engilberge, Andrea Bologna, Christian Joshua Rosner,

Mai Nakamura, Mohamed Watad, Fangjia Luo, Shigeki Owada, Takehiko Tosha, Jungmin Kang, Kensuke Tono, Yoshitaka Bessho, Eriko Nango, Antonio J Pierik, Antoine Royant, Ming-Daw Tsai, Junpei Yamamoto, Manuel Maestre-Reyna*, Lars-Oliver Essen*. *J. Am. Chem. Soc.* (2025). <https://doi.org/10.1021/jacs.4c18116>

309. “Observing DNA post-repair dynamics in a (6-4) photolyase-(6-4) photoproduct complex via fixed-target serial crystallography”, Po-Hsun Wang, Yuhei Hosokawa, Lars-Oliver Essen, Ming-Daw Tsai, Junpei Yamamoto, Manuel Maestre-Reyna, submitted.

Other Publications

1. “Learning Is a Lifelong Process” in Reflections on Multiliterate Lives, Diane Dewhurst Belcher, Ulla Connor, Eds., Multilingual Matters, 2001.

Patents

US Patent No: US 10,322,165 B2, “TIFA ANTAGONISTS AND THEIR USE FOR TREATING DISEASES”, June 18, 2019. Inventors: Ming-Daw Tsai, Tong-You Wade Wei, and Pei-Yu Wu

Popular Science in Chinese:

1. 中研院點將錄 化學到生物 解構蛋白質動態網絡—中研院生化所所長蔡明道專訪/曾琬迪。 [2009 年第 40 卷第 9 期 – 總號第 477 期 – 科學月刊五十年大全 \(ntu.edu.tw\)](https://www.ntu.edu.tw) (p. 664-670)
2. 「把生物分子看得更清楚！」結構生物學最新神器——冷凍電子顯微鏡 [\(sinica.edu.tw\)](https://www.sinica.edu.tw) 採訪撰文 | 廖英凱, 美術設計 | 林洵安, 中研院研之有物 2019-09-17。
3. 蛋白質的微觀世界 — 看見分子結構與生命的運作。 吳香儀、蔡明道。科學月刊 2024-1, p. 54-59. (Science Monthly, Vol. 55, No. 1, p. 54-59).
[蛋白質的微觀世界 看見分子結構與生命的運作 - 科學月刊Science Monthly \(scimonth.com.tw\)](https://www.scimonth.com.tw)
4. 微小卻關鍵的捕碳幫手 — 可調控固碳的藍綠菌。呂冠箴、張瓊文、蔡明道、廖俊智。科學月刊2024-4, p. 54-59. (Science Monthly, Vol. 55, No. 4, p. 52-57).
5. 一瞬之光 XFEL 顯微術：人類首次捕捉酵素修復 DNA 損傷的動態過程！ - 研之有物 | 串聯您與中央研究院的橋梁 [\(sinica.edu.tw\)](https://www.sinica.edu.tw) 採訪撰文 | 寒波, 責任編輯 | 簡克志, 美術編輯 | 蔡宛潔, 中研院研之有物2024-04-26。

6. “X光自由電子雷射XFFL！人類首次！以飛秒等級觀測時間，瞬間捕捉DNA修復！進入酵素修復DNA的微觀世界！”。 曲博科技教室 Dr. J Class. 2024-6-12.
https://www.youtube.com/watch?v=F7_POMy1baM

Invited Lectures

1. "³¹P(¹⁷O) NMR Studies of Metal-Nucleotide Interactions". Gordon Conference on Enzymes, Coenzymes, and Metabolic Pathways, July 7-11, 1980.
2. "Biochemical Application of NMR Methods Involving Oxygen Isotopes". Purdue University Biochemistry Program, January 18, 1982.
3. "Biochemical Application of ¹⁷O NMR and ³¹P(¹⁷O) NMR". Federation Meeting, Minisymposium on Spectroscopic Applications of ¹⁷O in Biological Chemistry, April 20, 1982.
4. "Phospholipids Chiral at Phosphorus, Stereochemistry of Reactions Catalyzed by Phospholipases". University of Chicago, Biophysics and Theoretical Biology, March 11, 1983.
5. "NMR, Chirality, Enzymes, and Membranes". Gordon Conference on Enzymes, Coenzymes, and Metabolic Pathways," July 4, 1983.
6. "Phospholipids Chiral at Phosphorus. Use of Chiral Thiophosphatidylcholine to Study the Metal-Binding Properties of Bee Venom Phospholipase A₂". Fourth Midwest Enzyme Conference, Chicago, IL, October 27, 1984.
7. "Synthesis and Biochemical Properties of Phospholipids Chiral at Phosphorus". Brown University, Dept. of Chemistry, March 1, 1985.
8. "¹⁷O NMR Study on the Interaction of Adenine Nucleotides with Metal Ions and with Myokinase". ACS 189th National Meeting, Symposium on Biological NMR, Miami Beach, May 1, 1985.
9. "Phospholipids Chiral at Phosphorus. Use of Chiral Thiophospholipids to Study the Mechanism of Phospholipase A₂". Steenbock Symposium on Stereochemistry of Enzymatic Reactions, University of Wisconsin, Madison, July 1-3, 1985.
10. "Use of ¹⁷O NMR and ³¹P NMR to Study Metal-Nucleotide-Enzyme Interactions". University of Maryland, Dept. of Chemistry, November 5, 1985.
11. "Phospholipids Chiral at Phosphorus". Gordon Conference on "Enzymes, Coenzymes, and Metabolic Pathways", June 29 - July 4, 1986.
12. "Phospholipids Chiral at Phosphorus. Stereochemistry of Enzymatic Reactions" Tenth International Conference on Phosphorus Chemistry, Bonn, W. Germany, August 31 - September 6, 1986.
13. "Phospholipids Chiral at Phosphorus". Second International Symposium on Phosphorus Chemistry Directed Toward Biology, Poland, September 7-12, 1986.
14. "Phosphorothioates: Preparation and Utilization of Phosphate Analogs". University of Texas, Health Science Center at San Antonio, Department of Biochemistry, Feb. 26, 1987.
15. "Biochemical and Biophysical Properties of Phospholipids Chiral at Phosphorus". University of Texas, Health Science Center at San Antonio, Department of Biochemistry, February 27, 1987.
16. "Phospholipids Chiral at Phosphorus". University of Kentucky, Department of Chemistry, March 13, 1987.
17. "Phospholipids Chiral at Phosphorus". University of Illinois, College of Medicine at Chicago, Department of Biological Chemistry, May 7, 1987.
18. "Phospholipids Chiral at Phosphorus". ACS 21st Middle Atlantic Regional Meeting, Pomona, NJ, May 20, 1987.
19. "Phospholipids Chiral at Phosphorus". University of Akron, Department of Chemistry, September 15, 1987.

20. "Gene Synthesis and Protein Engineering". OSU Industrial/Academic Chemistry Program, October 10, 1987.
21. "Is There Interfacial Activation in the Catalysis of Phospholipase A₂?" Seventh Midwest Enzyme Conference, University of Chicago, October 17, 1987.
22. "Phospholipids Chiral at Phosphorus". Second SCBA International Symposium and Workshop, Symposium on Bioorganic and Natural Product Chemistry, Berkeley, June 27-30, 1988.
23. "Stereochemistry of Phospholipases". Smith and Kline and French Laboratories, November 17, 1988.
24. "Use of Site-Directed Mutagenesis to Study the Structure-Function Relationship of Adenylate Kinase". Ohio State Biochemistry Program, February 21, 1989.
25. "Bioorganic Chemistry: From Small Molecules to Macromolecules". University of Washington, Seattle, Department of Chemistry, March 10, 1989.
26. "Stereochemistry and Mechanism of Phospholipases". Boston University, Department of Chemistry, March 20, 1989.
27. "Enzyme Mechanisms: From Substrate Engineering to Protein Engineering". Dept. of Biochemistry and Molecular Biology, Univ. of Chicago, May 10, 1989.
28. "Mechanism of Adenylate Kinase". Dept. of Biophysics, Max-Planck Institute for Medical Research, Heidelberg, West Germany, June 14, 1989.
29. "Mechanism of Adenylate Kinase". Institute of Organic and Biochemistry, University of Freiburg, Freiburg, West Germany, June 15, 1989.
30. "Bioorganic Chemistry: From Conventional to Contemporary". Institute of Chemistry, Academia Sinica, Taipei, Taiwan, Sept 4, 1989.
31. "Bioorganic Chemistry: From Conventional to Contemporary". Institute of Enzyme Research, University of Wisconsin at Madison, Sept. 14, 1989.
32. "Mechanism of Adenylate Kinase". Department of Biochemistry and Biophysics, Texas A&M University, November 1, 1989.
33. "Structural and Functional Studies on the Mechanism of Adenylate Kinase". Department of Chemistry, New Mexico State University, March 8, 1990.
34. "Gene Synthesis, Expression, and Protein Engineering of Phospholipase A₂ from Bovine Pancreas". Department of Biochemistry and Molecular Biology, New Mexico State University, March 9, 1990.
35. "Perfecting an Enzyme: A phospholipase A₂ with Significantly Improved Catalytic Activity". American Chemical Society National Meeting, Boston, Apr. 22-27, 1990.
36. "Enzyme Mechanisms: From Substrate Engineering to Protein Engineering". Third SCBA International Symposium and Workshop, Hong Kong, June 26-30, 1990.
37. "Protein Engineering of Phospholipase A₂ From Bovine Pancreas". Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan, July 2, 1990.
38. "A Chemist's Approach to Biomedical Research". Veterans General Hospital, Taipei, Taiwan, July 3, 1990.
39. "New Approaches in Bioorganic Chemistry". Department of Chemistry, National Taiwan University, Taipei, July 9, 1990.
40. "Structure-Function Studies of Large Organic Molecules-Enzymes". International Symposium for Chinese Organic Chemists, Shanghai, July 12-14, 1990.
41. "Mechanism of Adenylate Kinase: Have Previous NMR and X-Ray Results Passed the Test by Site-Directed Mutagenesis?" Monsanto Company, St. Louis, August 7, 1990.
42. "Modern Bioorganic Chemistry: Structure-Function Studies of Enzymes". Department of Chemistry, St. Olaf College, Northfield, Minnesota, Sep. 14, 1990.

43. "Mechanism of Adenylate Kinase: Site-Directed Mutagenesis Versus X-Ray and NMR", Kent State University, Kent, Ohio, October 4, 1990.
44. "Mechanism of Adenylate Kinase: Have Previous NMR and X-Ray Results Passed the Test by Site-Directed Mutagenesis?" Department of Chemistry, University of Delaware, November 5, 1990.
45. "Mechanism of Adenylate Kinase: Site-Directed Mutagenesis Versus X-Ray and NMR". Department of Chemistry, Washington State University, Pullman, WA, Feb. 19, 1991.
46. "Protein Engineering of Phospholipase A₂". Department of Chemistry, California Institute of Technology, Pasadena, CA, Feb. 27, 1991. (Joint Organic Chem./Chem. Biology)
47. "Protein Engineering of Phospholipase A₂". School of Pharmacy, University of Cincinnati, Cincinnati, Ohio, April 4, 1991.
48. "Protein Engineering of Bovine Pancreatic Phospholipase A₂". Royal Netherlands Academy of Arts and Sciences, Colloquium on Molecular Biology and Inhibition of Cellular and Extracellular Phospholipases A₂, Amsterdam, April 23-27, 1991.
49. "Mechanism of Adenylate Kinase: Manipulating Phosphorus Stereochemistry by Site-Directed Mutagenesis". Regional Meeting of the American Chemical Society, Indianapolis, May 29-31, 1991.
50. "Phospholipase A₂ Engineering". National Meeting of the American Chemical Society, New York City, Aug. 25-30, 1991.
51. "Structure-Function Relationship of Adenylate Kinase", Fox Chase Institute for Cancer Research, Philadelphia, September 19, 1991.
52. "Manipulating the Phosphorus Stereospecificity of an Enzyme", Dept. of Chemistry, University of Chicago, Nov. 15, 1991.
53. "Iterative Structure-Function Studies of Enzymes: A Case in Adenylate Kinase", Institute of Biological Chemistry, Academia Sinica, Taipei, Dec. 27, 1991.
54. "Modern Bioorganic Chemistry: Structure-Function Relationship of Enzymes", Institute of Chemistry, Academia Sinica, Taipei, Dec. 30, 1991.
55. "Structure-Function Relationship of Adenylate Kinase", Dept. of Biology, Syracuse University, March 6, 1992. (host: Richard Levy)
56. "Structure-Function Relationship of Adenylate Kinase", University of Florida College of Medicine, March 26, 1992. (host: David Silverman)
57. "Biochemical Applications on NMR", Dept. of Chemistry, Denison University, Granville, Ohio, April 23, 1992. (host: Richard Doyle)
58. "Structure-Function Relationship of Adenylate Kinase", Wright State University, Dayton Ohio, April 24, 1992. (host: Lawrence Prochaska)
59. "Stereochemical Mechanism of Phospholipase C", FASEB Summer Conference on Phospholipases, Saxtons River, Vermont, July 12-17, 1992. (Organizer: Ed Dennis)
60. "Structure-Function Relationship of Adenylate Kinase", Biotechnology Research Institute, National Research Council of Canada, Montreal, Sept. 2, 1992. (Host: Feng Ni)
61. "Structure-Function Relationship of Adenylate Kinase", Max-Planck Institute, Gottingen, Germany, Sept. 14, 1992. (Host: Fritz Eckstein)
62. "Structure-Function Relationship of Adenylate Kinase", EMBO Workshop, Germany, Sept. 16-19, 1992. (Organizer: Fred Wittinghofer)
63. "Structure-Function Relationship of Phospholipase A₂", Dept. of Chemistry, Indiana University, Oct. 23, 1992. (Host: David Daleke)
64. "Structure-Function Relationship Enzymes: a Case Study with Phospholipase A₂", Park Davis, Ann Arbor, May 4, 1993. (Host: Don Hupe)

65. "Structure-Function Relationship of Adenylate Kinase", Ann Arbor Enzymes Club, May 5, 1993. (Host: James Coward)
66. "Modern Bioorganic Chemistry: Structure-Function Relationship of Enzymes", Department of Chemistry, Tsing-Hua University, Taiwan, July 12, 1993.
67. "Improving the Structure-Function Relationship of Enzymes", Institute of Chemistry, Academia Sinica, Taipei, July 13, 1993.
68. "Structure-Function Relationship of Phospholipase A₂", Dept. of Chemistry, Wayne State University, Sept. 24, 1993. (Host: Shahriar Mobashery)
69. "Mechanism of Adenylate Kinase. ¹H, ¹³C, and ¹⁵N NMR Assignments, Secondary Structures, and Substrate Binding Sites", Thirteenth Midwest Enzyme Chemistry Conference, Chicago, October 9, 1993.
70. "NMR Analysis of the Structure of the Adenylate Kinase-MgAP₅A Complex", International Symposium on Adenylate Kinase, Yamaguchi University, Japan, March 26-28, 1994.
71. "Adenylate Kinase: From Molecular Biology to NMR Structure", Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan, March 28, 1994. (Host: Bai-Ling Lin)
72. "Structure-Function Relationship of Adenylate Kinase", Chicago Medical School, Chicago, May 5, 1994. (Host: Bob Kemp)
73. "Assignment and Secondary Structures of a 22 kDa System at pH 7.1: Adenylate Kinase Complex with MgAP₅A", Varian NMR Users Conference, Akron, August 18, 1994. (Host: Peter Rinaldi)
74. "Structure-Function Relationship of Adenylate Kinase", Floss Symposium, Seattle, Washington, August 27, 1994.
75. "Structure-Function Relationship of Adenylate Kinase", School of Pharmaceutical Sciences, Univ. of California at San Francisco, San Francisco, Sept. 15, 1994. (Host: George Kenyon)
76. "Structure-Function Relationship of Phospholipase A₂", Department of Medicinal Chemistry, University of Illinois at Chicago, October 3, 1994. (Host: Karol S. Bruzik)
77. "Adenylate Kinase: From Molecular Biology to Total Assignment by NMR", Department of Chemistry, University of Illinois at Chicago, October 4, 1994. (Host: Wan-Hua Cho)
78. "Structure-Function Relationship of Adenylate Kinase", Dept. of Biophysics and Physiology, Case Western Reserve University, October 17, 1994. (Host: C. R. Sanders)
79. "Syntheses and Biochemical Applications of Phosphoinositides", The 4th Tohwa University International Symposium on Chemistry on the Biologically and Physiologically Active Natural Products, Fukuoka, Japan, November 19-22, 1994.
80. "Modern Bioorganic Chemistry: Structure-Function Relationship of Enzymes." Department of Chemistry, Case Western Reserve University, Cleveland, March 9, 1995. (Host: Michael Zagorski)
81. "Structure-Function Relationship of Adenylate Kinase." Department of Chemistry, Miami University, Oxford, Ohio, March 30, 1995. (Host: John F. Sebastian)
82. "Syntheses and Biochemical Applications of Phosphoinositides", Institute of Chemistry, Academia Sinica, Taipei, May 6, 1995.
83. "Structural Analysis of a 22 kDa System at pH 7.1 by NMR: Adenylate Kinase Complex with MgAP₅A", Midwest Regional ACS Meeting, Akron, May 31, 1995
84. "Structural Determination of Adenylate Kinase, A 22 kD Protein", Fourteenth American Peptide Symposium, Columbus, June 18-23, 1995.

85. "From Protein Engineering to Drug Design". International SCBA Symposium on Rational Drug Design, Vancouver, June 25-30, 1995.
86. "Adenylate Kinase: A Model or an Exception?", Gordon Conference on Enzymes, Coenzymes, and Metabolic Pathways, New Hampshire, July 16-21, 1995.
87. "Structure-Function Relationship of Phospholipase A2", FASEB Summer Conference on Phospholipases, Vermont, July 22-27, 1995.
88. "Protein Structural Analysis by NMR", Department of Physics, Indiana University-Purdue University at Indianapolis, December 7, 1995.
89. "Design and Construction of a New Restriction Endonuclease Specific to the HIV Genome", International Symposium on Perspectives on Protein Engineering, Le Corum Montpellier, France, March 2-6, 1996.
90. "Structure-Function Relationship of Adenylate Kinase", Department of Chemistry, SUNY Stony Brook, March 25, 1996. (Host: Nicole Sampson)
91. "Modern Bioorganic Chemistry", The Fourth International Symposium for Chinese Organic Chemists, Hong Kong, April 5-8, 1996.
92. "Structure-Function Relationship of DNA Polymerase β " EMBO Meeting on Nucleotidyl and Phosphoryl Transfer in the Protein and RNA World, Xanten, Germany, Sept. 29 - Oct. 3, 1996.
93. "Structure-Function Relationship of Tumor Suppressor P16." Cancer Center, Ohio State University, November 6, 1996. (Host: Lee Johnson)
94. "Protein Engineering". Department of Chemical Engineering, Ohio State University, December 5, 1996. (Host: Shang-Tien Yang)
95. "Structural Analysis of Tumor Suppressor P16 by NMR". American Chemical Society Regional Meeting, Midland, Michigan, May 27, 1997.
96. "Adenylate Kinase: Site-directed Mutagenesis Versus NMR and X-ray". Protein Engineering Group, University of Toronto, May 29, 1997. (Host: Robert Reedjik)
97. "Probing Enzyme Mechanisms with Bridging and Nonbridging Sulfur Analogs of Nucleotides and Phospholipids". Department of Chemistry, University of Toronto, May 30, 1997. (Host: Andrew Woolley)
98. "Structure-Function Relationship of Bacterial PI-Phospholipase C." National Meeting of the American Chemical Society, Las Vegas, Sept. 7-11, 1997.
99. "Mechanism of PI-Specific Phospholipase C". Dept of Chemistry, Scripps Research Institute, September 12, 1997. (Host: Chi-Huey Wong)
100. "Structure-Function Relationship of PI-specific Phospholipase C". Dept of Biochemistry, Michigan State University, November 3, 1997. (Host: Honggao Yan).
101. "Mechanism of PI-Specific Phospholipase C". Dept of Pharmacology, Albert Einstein School of Medicine, New York, December 8, 1997. (Host: Zong-Yin Zhang)
102. "Structure-Function Relationship of Adenylate Kinase". University of Texas at Austin, January 23, 1998. (Host: Jon Robertus)
103. "Solution Structure of Tumor Suppressor p16 by NMR". Otterbein University, Westerville, Ohio, April 15, 1998. (Host: Chihae Yang)
104. "Structure and Function of Tumor Suppressor p16". Dept. of Chemistry, Florida State University, April 28, 1998. (Host: Alan Marshall)
105. "Structure and Mechanism of Tumor Suppressor p16^{INK4A}". Department of Biochemistry, Case Western Reserve University, May 6, 1998.
106. "Use of Thiophosphate Analogs to Probe the Mechanism of PI-Phospholipase C". 14th International Conference on Phosphorus Chemistry, Cincinnati, July 12-17, 1998.

107. "Structure-Function Analysis of the INK4 Family of Tumor Suppressors". Department of Biochemistry, University of Toledo, October 15, 1998. (Host: James Slama)
108. "A Novel, Dual-Function Catalytic Triad Arg-Asp-His for P-O Bond Cleavage Catalyzed by PI-PLC". ASBMB Fall Symposia, Lake Tahoe, CA, Oct 23-26, 1998.
109. "Structure-Function Analysis of the INK4 Family of Tumor Suppressors", NMR Technologies: Development and Applications Conference, Baltimore, October 29-30, 1998.
110. "A Novel, Dual-Function Catalytic Triad Arg-Asp-His for P-O Bond Cleavage Catalyzed by PI-PLC". Dept of Chemistry, National Taiwan University, Nov. 10, 1998.
111. "Structure-Function Analysis of the INK4 Family of Tumor Suppressors". Dept of Chemistry, Tsinghua University, Nov. 11, 1998.
112. "A Novel, Dual-Function Catalytic Triad Arg-Asp-His for P-O Bond Cleavage Catalyzed by PI-PLC". Institute of Chemistry, Academia Sinica, Nov. 13, 1998.
113. "Structure-Function Analysis of the INK4 Family of Tumor Suppressors". Department of Chemistry, Kent State University, November 19, 1998. (Host: Scott Prosser)
114. "Identification of a Novel Catalytic Triad Arg-Asp-His from PI-specific Phospholipase C". Canadian Society of Chemistry National Meeting, May 29-31, 1999.
115. "Solution Structure of the FHA2 Domain of RAD53". 31st Central Regional Meeting of the American Chemical Society, Columbus, Ohio, June 21-23, 1999.
116. "Solution Structures and Functional Analyses of Tumor Suppressors p16 and p18". SCBA International Symposium, Hong Kong, August 14-19, 1999.
117. "Structure and Function of a New Phosphoprotein Binding Domain FHA2 from Yeast Rad53." Midwest Enzyme Chemistry Conference, Chicago, October 2, 1999.
118. "New Structural Motifs for Protein-Protein Interactions in Cancer-related Pathways." University of Akron, November 23, 1999. (Host: Matthew Espe)
119. "Structure, Function, and Specificity of FHA, a New Phosphoprotein Binding Domain". Keynote Speaker, Volcano Conference, Seattle, Feb. 25-27, 2000.
120. "Mechanism of PI-Specific Phospholipase C". FASEB Summer Conference on Phospholipases, Snowmass Village, Colorado, July 8-13, 2000.
121. "Structure, Function, and Specificity of FHA, a New Phosphoprotein Binding Domain". Bruker Users Conference, Columbus, Ohio, October 5-6, 2000.
122. "Structure and Specificity of FHA, a New Phosphoprotein Binding Domain in Signal Transductions". OSBP Symposium Keynote Speaker, October 7, 2000.
123. "Structure, Function, and Specificity of FHA, a New Phosphoprotein Binding Domain with Dual Specificity." Cambridge Healthtech Institute Conference on Protein Structure. McLean, Virginia, October 26-27, 2000.
124. "Structure and Specificity of FHA, a New Phosphoprotein Binding Domain in Signal Transduction." Institute of Biophysics, Academia Sinica, Beijing, Oct. 31, 2000.
125. "Structure and Specificity of FHA, a New Phosphoprotein Binding Domain in Signal Transduction." Department of Chemistry, Beijing University, Nov. 3, 2000.
126. "Structure and Function of the INK4 Family of Tumor Suppressors." Institute of Biophysics, Academia Sinica, Beijing, Nov. 3, 2000.
127. Structure and Mechanism of Phospholipase A₂ from Bovine Pancreas. Institute of Biophysics, Academia Sinica, Beijing, Nov. 7, 2000.
128. Structure and Specificity of FHA, a New Phosphoprotein Binding Domain in Signal Transduction. Department of Chemistry, Tsinghua University, Nov. 9, 2000.
129. Structure-Function Relationship of Phosphatidylinositol-specific Phospholipase C. Institute of Biophysics, Academia Sinica, Beijing, Nov. 10, 2000.

130. "Structure, Function, and Specificity of FHA, a New Phosphoprotein Binding Domain". Eleventh International Conference on Second Messengers and Phosphoproteins, Melbourne, Australia, April 22-26, 2001.
131. "Structure, Function, and Specificity of FHA, a New Phosphoprotein Binding Domain". Bioorganic Chemistry Gordon Conference, June 17-22, 2001.
132. "A DNA Polymerase with Specificity for Four Correct and One Mismatch Base Pairs". Wayne State University Dept of Chemistry, Nov. 2, 2001. (Mark Spaller, host)
133. "Structure, Function, and Specificity of FHA, a New Phosphoprotein Binding Domain". Department of Pharmacology, Ohio State University, Nov. 13, 2001. (Dale Hoyt, host)
134. "Chemistry at the Interface of Biology". Department of Chemistry, Central State University, Dayton, Ohio, Feb. 14, 2002. (Willie Houston, Host)
135. Symposium on "Modern Aspects of Structure Function Correlation of Biomolecules", National Meeting of the American Chemical Society, Orlando, Florida, April 7-11, 2002.
136. "A Simplified Model for the Fidelity of DNA Polymerases". Gordon Research Conference on Mutagenesis, Main, July 28-Aug. 2, 2002.
137. "Structure and Mechanism of DNA Polymerases". UTMB Galveston, TX, September 9, 2002. (James Lee, host)
138. "Chemical Basis of DNA Polymerase Fidelity – the Way We Survive". Evans Lecture Event, October 4, 2002.
139. "A Simplified Mechanism for the Fidelity of DNA Polymerases". Vanderbilt University, October 11, 2002.
140. "Structure and Mechanism of High-Fidelity and Low-Fidelity DNA Polymerases". Institute of Molecular Biology, Academia Sinica, October 21, 2002.
141. "A New View to the Fidelity Mechanism of High-Fidelity and Low-Fidelity DNA Polymerases". Michigan State University, Nov. 8, 2002. (Honggao Yan, host)
142. "Structure and Mechanism of High-Fidelity and Low-Fidelity DNA Polymerases". Texas A&M University, March 26, 2003. (Paul Fitzpatrick, host)
143. "Structure and Mechanism of High-Fidelity and Low-Fidelity DNA Polymerases". Thomas Jefferson University, Philadelphia, May 6, 2003. (Ya-ming Hou, host)
144. "Opportunities for Chemists in the Post-genomic Era". CACS-Tristate Chapter Symposium. Schering-Plough Research Institute, June 7, 2003.
145. "DNA Polymerases: from Chemistry to Biology", Dept of Chemistry, Tsinghua University, Beijing, Nov. 7, 2003
146. "DNA Polymerases: from Chemistry to Biology", Dept of Chemistry, Beijing University, Beijing, Nov. 10, 2003
147. "DNA Polymerases: from Chemistry to Biology", Dept of Chemistry, Tsinghua University, Hsinchu, Nov. 18, 2003
148. "Structure and Mechanism of High-Fidelity and Low-Fidelity DNA Polymerases". Dept of Chemistry, Georgia State University, December 12, 2003. (Jenny Yang, host)
149. "Structure and Mechanism of High-Fidelity and Low-Fidelity DNA Polymerases". Dept of Biochemistry, Duke University, Jan 23, 2004. (Johannes Rudolph, host)
150. "Structural Basis of the Ligand Specificity of FHA Domains", Biophysics Program, Institute of Physics, Academia Sinica, Taipei, March 29, 2004. (Tsong Tian Yow, host)
151. "FHA Domains: from Chemistry to Biology", College of Life Sciences, Chiao-Tung University, Hsinchu, March 30, 2004. (Yuh-Shyong Yang, host)
152. "Enzymatic Evidence for a Low-Fidelity Base Excision Repair Pathway Encoded by African Swine Fever Virus", Research Division, Veterans Hospital, Taipei, April 2, 2004. (Ming-Shi Hsiao, host)

153. "Structural Basis of the Ligand Specificity of the FHA Domain of Human Tumor Suppressor Chk2", Symposium on "Drug Discovery by Chemical Genomics Approach", 19th Joint Biological Societies Conference (JBSC), Taipei, April 10-11, 2004. (Also served as session chair.)
154. "NMR structures of proteins related to DNA damage and cancer". Structural Biology Group, NIH, May 10, 2004. (Host: Angela Gronenbon)
155. "Structure and Mechanism of a High-Fidelity and a Low-Fidelity DNA Polymerases", The 9th Symposium on Recent Advances in Biophysics, Taipei, May 26-28, 2004. (Keynote)
156. "NMR structures of proteins related to DNA damage and cancer". Symposium on structures, dynamics, and interactions of biological molecules, National Central University, June 4, 2004.
157. "NMR studies of proteins related to DNA damage and cancer". University of Carnegie Mellon, July 29, 2004 (Chien Ho, host).
158. "Stereochemistry Goes a Long Way in Phosphatidylinositol-specific Phospholipase C", Frontiers of Bioorganic and Natural Product Chemistry Symposium, Seattle, August 26-29, 2004. (Also serve as chair of the organizing committee.)
159. "Structure and Function of FHA Domains in Signal Transduction". Tsinghua University, September 15, 2004.
160. "Learning the Transition State Structure of Phosphatidylinositol-specific Phospholipase C from Bioorganic Approaches", Eighth ISOC International Symposium, Hong Kong, December 19-22, 2004.
161. "NMR studies of proteins related to DNA damage and cancer". Institute of Bioinformatics and Structural Biology, National Tsing Hua University, December 30, 2004. (Ping-Chiang Lyu, host)
162. "FHA Domains in Signal Transduction: from Chemistry to Biology", Department of Chemistry, Case Western Reserve University, Cleveland, Ohio, January 20, 2005. (Robert Salomon, host)
163. "Protein-Phosphoprotein Interactions – A New Frontier in Structural Biology." National Defense University, Taipei, Taiwan, March 10, 2005.
164. "Chemical Approach to Biology: A Case for Caution". Symposium on Chemistry at the Interface of Biology, Salk Fork Resort, May 14, 2005.
165. "Structure, Function and Specificity of FHA Domains". Institute of Pasteur, May 23, 2005.
166. "Protein-Phosphoprotein Interactions – A New Frontier in Structural Biology." Biophysical Society Meeting, Hsinchu, May 27, 2005. (Plenary lecture)
167. "When NMR Beats X-ray Crystallography in the Determination of Protein Structures." Taiwan Magnetic Resonance Society, Taipei, May 28, 2005. (Inauguration lecture)
168. "Protein-Phosphoprotein Interactions – A New Frontier in Structural Biology." National Taiwan University (Chemistry), Taipei, Taiwan, June 10, 2005.
169. "Protein-Phosphoprotein Interactions – A New Frontier in Structural Biology." NHRI, Taiwan, Sept 02, 2005.
170. "When NMR Beats X-ray in Solving Protein Structures". First Asia-Pacific NMR Symposium, Japan, Nov. 10-11, 2005.
171. "FHA Domains in Signal Transduction: a Case for Caution in Chemical Biology". Dept of Chemistry, SUNY at Buffalo, Nov. 30, 2005. (John Richard, host)
172. "Structural Biology of Cancer-relevant Proteins". NHRI Cancer Program, Taipei, June 9, 2006.

173. "Mechanism of action of high and low fidelity DNA polymerases". Gordon Research Conference on Enzymes, Coenzymes, and Metabolic Pathways, New Hampshire, July 16-21, 2006. (John Richard and Sue Miller, co-chairs)
174. "Identification of Histone Demethylases from *Saccharomyces cerevisiae*". Biophysics Program, Ohio State University, October 4, 2006. (Ralph Bundschuh, host)
175. "Structural Biology of Cancer Proteins." Institutional Seminar of National Taiwan Univ. College of Medicine and University Hospital, December 27, 2006. (Host: 張美惠)
176. "Specificity of Phosphothreonine Recognition by FHA Domains". International Conference of Phosphorus Chemistry, Xiamen, China, April 15-21, 2007.
177. "Structure, Function and Specificity of Phosphothreonine-specific FHA Domains". Dept of Chemistry, UC Davis, May 15, 2007. (Host: Xi Chen)
178. "FHA Domain Mediated Signaling Related to DNA Damage and Cancer". Cellular and Molecular Medicine Program, Academia Sinica, June 1, 2007.
179. "Specificity of Phosphothreonine Recognition by FHA Domains". XXIII International Conference on Yeast Genetics and Molecular Biology, Melbourne, Australia, July 2-6, 2007.
180. "FHA Domain - A Novel Phosphate Counting Switch for Sequential Activation of a Checkpoint Kinase Cascade", Eli Lilly, Indianapolis, October 4, 2007. (Host: Chuan Shih)
181. "A phospho-counting switch for sequential activation of a checkpoint kinase cascade". 2nd International Symposium on Bio-Inspired Engineering (ISBIE), October 8-10, 2007 at the Le Meridien Hotel, Dead Sea, Israel.
182. "A phospho-counting switch for sequential activation of a checkpoint kinase cascade". The 2nd Asian-Pacific NMR Symposium, Oct. 12-14, 2007, Hsin-chu, Taiwan (Plenary Lecturer)
183. "Nuclear Protein NP as a Target for Inhibition of Viral Replication". International Symposium on Flu Virus, Oct 22, 2007, NHRI/NTUH, Taiwan.
184. "A phospho-counting switch for sequential activation of a checkpoint kinase cascade". International Symposium on Proteins: from Chemistry to Biology, October 24-26, 2007, Institute of Biological Chemistry, Academia Sinica, Taiwan.
185. "FHA Domain in Signal Transductions: from Chemistry to Biology". National Tsinghua University Dept of Chemistry, November 21, 2007.
186. "Oligomerization of the Nucleocapsid Protein as a Target for the Flu Virus". UC Davis – Academia Sinica Bilateral Conference, December 6-7, 2007, Taipei.
187. "FHA Domain in Signal Transductions: from Chemistry to Biology". Kaoshiung Medical Univdrsty. March 19, 2008.
188. "From the End to the Beginning". Great Lakes Regional ACS Meeting, Columbus, Ohio, June 14, 2008. (<http://www.centralregionacs.org/wp-content/uploads/2015/03/2008.pdf>)
189. "A Phospho-counting Switch for Sequential Activation of a Checkpoint Kinase Cascade". Toulouse University, France, July 7, 2008. (Host: Bernard Salles)
190. "Nucleocapsid Protein NP as a Target for Inhibition of Flu Virus Replication". World Summit of Antivirals 2008, Kunming, China, July 20-22, 2008.
191. "FHA Domain in Signal Transduction: Chemistry, Structure, and Biology". Institute of Chemistry, Academia Sinica, Taipei, Sept 25, 2008. (Host: Sunney Chan)

192. "A Phospho-counting Switch for Sequential Activation of a Checkpoint Kinase Cascade in *S. cerevisiae*". Institute of Plant and Microbial Biology, Academia Sinica, Taipei, Oct 1, 2008. (Host: Sunny Lo)
193. "FHA Domain in Signal Transduction: Chemistry, Structure, and Biology". National Cheng Kung University, Tainan, October 2, 2008.
194. "Structures of FHA domain complexes with phosphoprotein and phosphopeptides with single and multiple pThr sites". CSMRS-2, Hang-Chou, China, Oct 23-27, 2008.
195. "Structure, Function and Specificity of Phosphothreonine-specific FHA Domains". Dept of Biochemistry, UC Riverside, Nov. 4, 2008. (Host: John Shyy)
196. "Structure, Function and Specificity of FHA Domains in DNA Damage Response Signaling." Department of Medicinal Chemistry, Purdue University, November 7, 2008.
197. "Structure and mechanism of a mutagenic DNA polymerase from African Swine Fever Virus". 4th International Symposium on Biocatalysis and Biotechnology, Academia Sinica, Taipei, Nov 19-21, 2008.
198. "Structure, Function and Specificity of Phosphothreonine-specific FHA Domains". National Yangming University, November 24, 2008. (Host: 魏耀揮)
199. "Cancer Research from the Angle of Structural Biology". "姆山生物醫學講座", Taipei Medical University, Nov. 27, 2008.
200. "Counting Phosphates by FHA Domains". Taiwan – Japan Proteomics Symposium 2008. Academia Sinica, December 3, 2008.
201. "FHA, a signaling domain with diverse specificities". The 6th Asian Biophysical Association (ABA) Symposium, Hong Kong University of Science and Technology, Hong Kong, 11-14 January 2009.
202. "Molecular Interactions of Biophosphates – from Catalysis to Signaling". 24th Joint Annual Conference of Biomedical Sciences, Taipei, Taiwan, March 21-22, 2009. (Special Lecturer)
203. "Protein-phosphoprotein interactions of phosphothreonine-specific FHA domains". Symposium of Nuclear Magnetic Resonance for Biological Macromolecules 2009 (SNBM2009), Hefei, China, June 25-29, 2009.
204. "Structure and Mechanism of Mutagenic DNA Polymerase X". 3rd Asian-Pacific NMR Conference, Korea, Oct 25-28, 2009.
205. "Protein-phosphoprotein interactions of phosphothreonine-specific FHA domains". Tsinghua University, Beijing, Nov. 25, 2009. (Host: Yigong Shi)
206. "Structure and Mechanism of Mutagenic DNA Polymerase X". Beijing Conference and Exhibition on Instrumental Analysis (BCEIA), Beijing, November 25-28, 2009. (Keynote speaker)
207. "Protein-phosphoprotein interactions of phosphothreonine-specific FHA domains". Nankai University, Tianjin, Nov. 27, 2009. (Host: George Wang)
208. "An Enzymologist's Approach to Histone Demethylases". The 5th Chromosome Biology Mini-Symposium. Institute of Molecular Biology, Academia Sinica, Taiwan, Dec. 2-3, 2009.
209. "A Phosphate-counting Mechanism for Sequential Activation of a Checkpoint Kinase Cascade". Department of Structural Biology, University of Pittsburgh. December 7, 2009.
210. "Structure and Mechanism of Mutagenic DNA Polymerase X". Taiwan Enzyme Mechanism Conference, Academia Sinica, Taipei, Taiwan, Dec 15, 2009.

211. "Protein-Protein Interactions as Potential Drug Targets". 7th International Symposium for Chinese Medicinal Chemists (ISCMC-2010), Kaoshiung Medical University, Feb. 1-5, 2010.
212. "Counting the Phosphates of a Phosphorylation Site Cluster". 2010 Disease Biomarker and TPS International Conference, Chang-Gung, Taipei, April 23-24, 2010.
213. "A Phosphate-counting Mechanism for Sequential Activation of a Checkpoint Kinase Cascade". ETH, Zurich, Switzerland, May 7, 2010.
214. "Mechanism of High-Fidelity and Mutagenic DNA Polymerases". International Conference on Evolving DNA Polymerases: Chemistry meets Biology, Monte Verità, Switzerland, May 9-14, 2010.
215. "Mechanism and specificity of Protein-phosphoprotein interactions". 10th Taiwan International Symposium on Statistical Physics: Critical Phenomena and Complex Biological Systems, Institute of Physics of Academia Sinica, July 27-31, 2010.
216. "A Phosphate-counting Mechanism for Sequential Activation of a Checkpoint Kinase Cascade". UCSD-Taiwan Symposium, San Diego, September 16-17, 2010.
217. "A Phosphate-counting Mechanism for Sequential Activation of a Checkpoint Kinase Cascade". National Institutes of Health, Washington DC, October 22, 2010.
218. "A Phosphate-counting Mechanism for Sequential Activation of a Checkpoint Kinase Cascade". Dept of Pharmacology, Johns Hopkins University, October 24, 2010.
219. "Protein-(phospho)protein interactions as potential drug targets". National Taiwan University College of Pharmacy, Nov. 8, 2010.
220. "蛋白質的奧密". National Chiao-Tung University, December 10, 2010.
221. "Structure and Mechanism of Mutagenic DNA Polymerase X". Pacificchem of American Chemical Society, Honolulu, December 16-20, 2010.
222. "Structural and Mechanistic Bases for the G:G Specificity of ASFV DNA Polymerase X". 22nd Enzyme Mechanisms Conference, Loews Don CeSar Beach Resort, St. Pete Beach, Florida, January 3-5, 2011.
223. "Structure and Mechanism of a Viral DNA Polymerase with G:G Specificity". Asian Biophysical Society Meeting, New Dehli, Jan 30 – Feb. 1, 2011. (Plenary)
224. "Structure and Mechanism of a Viral DNA Polymerase with G:G Specificity", 76th Israel Chemical Society Meeting, Tel Aviv, Feb 9-10, 2011.
225. "Structure and function of FHA domains in DNA damage and cancer signaling". National Chung-Hsing University, April 15, 2011.
226. "Influenza virus inhibitors that disrupt the nucleoprotein trimer". Academia Sinica – Johnson & Johnson Bilateral Symposium on Infectious Diseases, April 27-28, 2011.
227. "FHA, a signaling domain with diverse specificities and functions". FAOBMB Micro Symposium on "Advances in biochemistry and molecular biology for biomedical applications". Academia Sinica, Taipei, May 6, 2011.
228. "Structure and function of FHA domains in DNA damage and cancer signaling". 100年度國家衛生研究院生物醫學學術研討會, Chu-Nan, August 15-16, 2011.
229. "Influenza virus inhibitors that disrupt the nucleoprotein trimer". National Research Institute of Chinese Medicine, Taipei, Sept 21, 2011.
230. "FHA, a signaling domain with diverse specificities and functions". FAOBMB Conference, Singapore, October 5-7, 2011.
231. "How some error prone DNA polymerases overcome Watson-Crick base pairing". The 17th International Biophysics Congress (IUPAB), Beijing, Oct 31 – Nov. 3, 2011.

232. "Counting Phosphates". 2011 International Conference on Functional Proteomics: Advances in Post-translational Modification. Academia Sinica, Taipei, November 14-15, 2011.
233. "How some error prone DNA polymerases overcome Watson-Crick base pairing". 2nd Taiwan Enzyme Mechanism Conference, Taichung, December 15-16, 2011. (Plenary)
234. "A Phosphate-counting Mechanism for Sequential Activation of a Checkpoint Kinase". UC Davis, Sacramento, CA, Feb 17, 2012.
235. "Studies of proteins involved in cell cycle progression that are closely related with cancer and DNA damage". KMU Biomedical Symposium, March 21-22, 2012.
236. "Mechanism of Rad53 kinase activation in vivo - counting the phosphates by FHA domains". Department of Chemistry, UC Berkeley, Berkeley, CA, March 23, 2012.
237. "How many phosphorylation sites can a protein have, and what are the functions of multi-site phosphorylations?" Taiwan Proteomics Society meeting, May 31 – June 1, 2012, KMU.
238. "How a phosphorylation cluster regulates the activation and function of yeast checkpoint kinase Rad53". 8th International Symposium on Biocatalysis and Biotechnology, Sonoma Wine Country, CA, Oct 28-31, 2012.
239. "How a phosphorylation cluster regulates the activation and function of yeast checkpoint kinase Rad53". FAOBMB Congress, Bangkok, Thailand, November 25-29, 2012.
240. "Enzyme mechanisms from in vitro to in vivo". AS-CAS Bilateral Conference, Beijing, Dec 3-4, 2012.
241. "The entangled triangular relationship between structure, function, and mechanism of proteins". 21st Cell and Molecular Biology Frontier Science Symposium, Ken-Ding Park, 1/30 to 2/1, 2013. (Plenary Lecture)
242. "Protein-phosphoprotein complexes in DNA damage and cancer signaling". RIKEN-Academia Sinica Joint Conference, Taipei, March 2, 2013.
243. "The entangled triangular relationship between structure, function, and mechanism of proteins". National Central University, April 25, 2013.
244. "Functions of phosphorylation site clusters and multiple phosphorylations". 2013 Taiwan Proteomics Society International Conference: Recent Advances in Translational Medicine, Taipei Medical University, May 24-25, 2013.
245. "Protein-phosphoprotein complexes in DNA damage and cancer signaling". 12th HUPO World Congress, Yokohama, Japan, September 14-18, 2013.
246. "Protein-phosphoprotein complexes in DNA damage and cancer signaling". The 13th KIAS Conference on Protein Structure and Function, Seoul, Korea, September 26-28, 2013.
247. "Nucleoprotein as a target for influenza virus inhibitors". Yonsei University, Seoul, Korea, September 30, 2013. (Host: Young-Ki Paik)
248. "How phosphothreonine recognition by FHA domains control diverse biological functions". University of Alberta, Alberta, Canada, October 25, 2013. (Host: Todd Lowary) [Distinguished Asian Visiting Speaker]
249. "How a low-fidelity DNA polymerase chooses non-Watson-Crick from Watson-Crick incorporation". Fourth Conference of the Asia Pacific Protein Association (APPA2014), Jeju Island, Korea, May 17-20, 2014. [Plenary lecture]
250. "Chemical Specificity in Biology". 103年度生命科學組第29屆新科院士演講. Academia Sinica, June 27, 2014.

251. "Structural approach to tumor suppressors and cancer signaling". 2014 International Symposium for Recent Advances in Cancer (2014 ISRAC), Taipei Medical University, June 28, 2014.
252. "Mechanisms of phosphothreonine signaling and kinase activation". Department of Chemistry and Biochemistry, The Ohio State University, Columbus, Ohio, October 9, 2014.
253. "How a low-fidelity DNA polymerase chooses non-Watson-Crick from Watson-Crick incorporation". Korea-Taiwan Biophysical Conference, Daeyue, Korea, Nov 21-22, 2014.
254. "Mechanisms of phosphothreonine signaling and checkpoint kinase activation". 13th International Symposium for Chinese Organic Chemists (ISCOC-13), Xiamen, December 19-22, 2014. [Plenary Lecture]
255. "Mechanisms of phosphothreonine signaling and checkpoint kinase activation". 24th Enzyme Mechanisms Conference, Galveston, Texas, January 4-8, 2015.
256. "How a low-fidelity DNA polymerase chooses non-Watson-Crick from Watson-Crick incorporation". College of Pharmacy, University of Texas at Austin, Jan 9, 2015.
257. "Unique mechanisms of phosphothreonine signaling in DNA damage response and cancer". 2015 Scripps Research Institute meeting "Frontier in Biomedical Sciences". Palm Springs, CA, Feb 14-16, 2015.
258. "Chemical Specificity in Biology". 生物醫學聯合學術年會, March 21, 2015 (Keynote Lecture)
259. "Solution NMR studies of the structure and mechanism of DNA polymerases". 6th Asia-Pacific NMR Symposium, at The Hong Kong University of Science and Technology (HKUST) August 13-16, 2015.
260. "How some low-fidelity DNA polymerases choose non-Watson-Crick from Watson-Crick incorporation". 7th Beilstein ESCEC Symposium, Rudesheim, Germany. September 14 - 18, 2015.
261. "Use of site specifically phosphorylated proteins to examine the mechanism of autophosphorylation of Rad53 kinase". 2015 RIKEN-Academia Sinica Joint Conference on Chemical Biology, Academia Sinica, Taipei, Oct 15-16.
262. "TIFA, immunity, and cancer". Chang-Gung University, Taipei. Oct 30, 2015.
263. "How a low-fidelity DNA polymerase chooses non-Watson-Crick from Watson-Crick incorporation". Pacifichem 2015, Hawaii, December 15-20, 2015.
264. "Structure and Function of TIFA – A New Player in Immunity and Cancer". Rockefeller University, New York City, May 10, 2016.
265. "Phosphothreonine signaling with FHA domains in DNA damage response and cancer". UT Southwestern Medical Center, Dallas, Texas, May 12, 2016.
266. "Structure and Function of TIFA – A New Player in Immunity and Cancer". University of Cambridge, Cambridge, UK, October 10, 2016.
267. "Structure and Function of TIFA – A New Player in Immunity and Cancer". Chinese Academy of Sciences, Shanghai, November 7, 2016.
268. "Structure and Function of TIFA – A New Player in Immunity and Cancer". Yong-Ling Symposium, Taipei, November 27-28, 2016.
269. "Structure and Function of TIFA – A New Player in Immunity and Cancer". RIKEN – AS Bilateral Symposium, RIKEN, Japan, March 27-29, 2017.
270. "Proteins: Past, Present, and Future". 國立中央大學生醫理工學院傑出講座, May 2, 2017.

271. "Structure and Function of TIFA – A New Player in Immunity and Cancer", Taiwan-Germany Cancer Meeting, Taipei, June 26-27, 2017.
272. "Structural Biology Research in IBC and in My Lab in the Past 40 Years". IBC 40th Anniversary Symposium, Academia Sinica, July 6-7, 2017.
273. "Structural Mechanism for the Fidelity Modulation of DNA Polymerase λ ". APPA, Thailand, July 11-14, 2017.
274. "Structure and Function of TIFA – A New Player in Immunity and Cancer", 永信李天德醫藥基金會 Keynote speech, Taichung, September 1-2, 2017.
275. "Structural Mechanism for the Fidelity Modulation of DNA Polymerases". Beilstein Enzymology Symposium, Rudesheim, Germany, September 19 - 21, 2017.
276. "How DNA polymerases catalyze replication and repair with contrasting fidelity", University of Utrecht, Utrecht, The Netherlands, Sept 26, 2017. (Host: Rolf Boelens)
277. "How DNA polymerases catalyze replication and repair with contrasting fidelity", TSBMB 秋令營 Keynote speech, I-Shou University, Kaohsiung, November 17, 2017.
278. "The development of protein structures and recent breakthrough". 錢思亮院長講座, Academia Sinica, Taipei, Feb 10, 2018.
279. "Why is the yeast checkpoint kinase Rad53 so highly phosphorylated?". The 18th KHUPO Annual International Proteomics Conference, Seoul National University, Seoul, Korea, March 29-30, 2018.
280. "Progress Report of the Taiwan Protein Project". 2018 Annual Symposium, Taiwan Biophysics Society, Taichung, Taiwan, May 23-25, 2018.
281. "Why is the yeast checkpoint kinase Rad53 so highly phosphorylated?". 2018 Frontier Bioorganization Forum, Okazaki University, Okazaki, Japan, July 8-10, 2018.
282. "Taiwan Protein Project and Cryo-EM". National Tsinghua University, Dec. 13, 2018.
283. "New Opportunities in Cryo-EM". 細胞及分子生物新知研討會, Kenting, Taiwan, Jan 23-25, 2019. Keynote lecture.
284. "New Horizon in Enzymology from Cryo-EM and X-ray Free-electron Laser". Chinese University of Hong Kong, March 26-29, 2019.
285. "Structure and Function of TIFA – A New Player in Immunity and Cancer", College of Pharmacy, University of Illinois at Chicago, May 2, 2019.
286. "New Horizon in Enzymology from Cryo-EM and X-ray Free-electron Laser (XFEL)". Ohio State University, May 3, 2019.
287. "Co-evolution between structural biology and enzymology". Taiwan Biophysical Society, I-Lan, May 29, 2019.
288. "The development of protein structures and recent breakthrough (蛋白質結構的發展和最新突破)". Taiwan Biophysical Society, I-Lan, May 31, 2019 (to high school students).
289. "New Horizon in Enzymology from Cryo-EM and X-ray Free-electron Laser (XFEL)". 2019 Frontier Bioorganization Forum, Korea Institute of Advanced Science and Technology (KIAS), Seoul, July 6-9 (2019).
290. "New Horizon in Enzymology from Cryo-EM and X-ray Free-electron Laser (XFEL)". Beilstein Enzymology Symposium, Rudesheim, Germany, September 10-12, 2019.
291. "Probing the cofactor specificity, pH effect, and temperature effect of archaeal ketol-acid reductoisomerase by cryo-EM". Phillips University, Marburg, Germany, Sept 17, 2019.
292. "New Horizon in Enzymology from Cryo-EM and X-ray Free-electron Laser (XFEL)". Oregon Health and Science University, October 8, 2019. Host: Show-Ling Shyng

293. "Establishment and Progress of Academia Sinica Cryo-EM Center". 中研院冷凍電顯中心的成立與成果 Open House Day, Oct 26, 2019, Academia Sinica.
294. "New Horizon in Enzymology from Cryo-EM and X-ray Free-electron Laser (XFEL)". Distinguished Seminar Series of the Genomics Research Center, Feb. 19, 2020.
295. "My forty-year ride from chemistry to biology and back to chemistry", Institute of Biological Chemistry, Academia Sinica, August 21, 2020.
296. "How cryo-EM can help your life science research". College of Life Sciences, National Taiwan University, October 14, 2020.
297. "My forty-year ride in research from chemistry to biology", National Chung Hsing University 惠蓀講座, Oct 16, 2020.
298. "Cryo-EM in Enzymology 1: Structural basis of pH dependence, ligand specificity, and temperature effect". Beilstein Enzymology Talks, April 14, 2021.
299. "Cryo-EM in Enzymology 2: Structural factors governing the fidelity of DNA recombinases RAD51 and DMC1." Beilstein Enzymology Talks, May 5, 2021.
300. "Current Progress and Potential of Cryo-EM in Taiwan's Life Science Research". 35屆生醫年會-細分學會研討會, May 15, 2021 (Keynote). Canceled.
301. "Current status of cryo-EM in Taiwan and its potential in biomedical research". 中國醫藥大學--現代生物醫學講座, June 11, 2021.
302. "Watching a DNA photolyase undergoing photoactivation and DNA repair by time-resolved serial femtosecond X-ray crystallography". Beilstein Enzymology Symposium, Rudesheim, Germany, September 21-23, 2021. Virtual conference.
303. "Cryo-EM in Enzymology". Asia-Pacific Cryo-EM Symposium, December 6-8, 2021. Virtual conference.
304. "Complementarity between cryo-EM and solution NMR". Biomolecular Structure and Dynamics: Recent Advances in NMR, Pacificchem 2021, Hawaii, December 15-20, 2021.
305. "Watching a DNA photolyase undergoing photoactivation and DNA repair by time-resolved serial femtosecond X-ray crystallography". Biological Structural Dynamics by Ultrafast X-ray and 4D electron microscopy, Pacificchem 2021, Hawaii, December 15-20, 2021.
306. "Structural Biology in Taiwan: Past, Present and Future". Taiwan Cryo-EM Symposium 2022, IBC, Academia Sinica, Taiwan, March 23-24, 2022.
307. "Dynamics in Enzyme Catalysis by Cryo-EM and XFEL". ABA-APPA-TBS Joint Congress, Tainan, Taiwan, June 22-25, 2022. (ABA Lecture)
308. "Watching photolyase-catalyzed bond breaking and DNA repair in real time by XFEL". 2022 Users Conference, NSRRC, Hsinchu, Taiwan, Sept 1, 2022.
309. "Cryo-EM in Enzymology and Biocatalysis". European Society of Applied Biocatalysis (ESAB) Webinar, Nov. 18, 2022
310. "Development and current status of high-resolution cryo-EM research in Taiwan". The 4th East-Asia Microscopy Conference, EAMC4, Taipei, Taiwan, December 1-4, 2022. <http://eamc4.net/index> (Plenary)
311. "Life Science Research: Important developments in the past 50 years and major challenges ahead", Yen Kwo-Yung Lecture in Life Sciences, New Asia College, CUHK, April 12, 2023.
312. "Frontiers in structural biology: from snapshots to processes", Yen Kwo-Yung Lecture in Life Sciences, Chinese University of Hong Kong, April 13, 2023.

313. “The Microscopic World of Proteins”. Yen Kwo-Yung Lecture in Life Sciences, Hong Kong Science Museum, April 15, 2023.
314. “An overtime turned into a new game in structural biology”. Antibody Therapeutics & Frontiers in Biomedical Sciences Conference, National Biotechnology Research Park, May 26-27, 2023.
315. “Dynamics in enzyme catalysis by temperature-resolved cryo-EM and time-resolved XFEL”. California Institute of Technology, August 23, 2023.
316. “Think small – from chiral methyl to real-time DNA repair”, Heinz G. Floss Memorial Symposium in Chemical Biology, University of Seattle, August 28, 2023.
317. “Visualizing enzyme catalysis and DNA repair by temperature-resolved cryo-EM and time-resolved XFEL”. GRC Distinguished Seminar Series, Academia Sinica, January 31, 2024. (Host: Tom Lin)
318. “Visualizing the DNA repair process by a photolyase at atomic resolution”. 中國醫藥大學--現代生物醫學講座, March 1, 2024. (Host: 洪士杰院長)
319. “Visualizing enzyme catalysis and DNA repair by temperature-resolved cryo-EM and time-resolved XFEL”. 陽明交通大學, Hsinchu, April 10, 2024
320. “見證奈米大小的酵素在奈秒內修復受損的DNA”. 吳大猷院長科普講座, Academia Sinica, September 10, 2024.
321. “Entering the age of protein cinematography”. IAMS / NTU Chemistry Weekly Colloquium, Dr. Poe Lecture Hall, IAMS, Oct. 17, 2024, Taipei.
322. “Dynamic mechanisms of DNA repair: from SAXS to XFEL”. Plenary speaker (opening speech), [XIX International Small-Angle Scattering Conference \(SAS2024\)](#), Nov. 3-8, 2024.
323. “Visualizing enzyme catalysis and DNA repair by temperature-resolved cryo-EM and time-resolved XFEL”. LCLS, Stanford, Nov. 11, 2024. (Host: Wah Chiu)
324. “Visualizing enzyme catalysis and DNA repair by temperature-resolved cryo-EM and time-resolved XFEL”. Department of Pharmacology, UCSD, Nov. 12, 2024. (Host: Jin Zhang)
325. “Cryo-EM in enzymology and conformational dynamics”. International Congress of Cell Biology (ICCB), Cancun, Mexico, Nov. 14, 2024.
326. “Visualizing enzyme catalysis and DNA repair by temperature-resolved cryo-EM and time-resolved XFEL”. Ohio State Biochemistry Program, OSU, Nov. 19, 2024. (Host: Charles Bell)
327. “Comparison of crystallography and cryo-EM: present and future”. Keynote speaker. Asian Crystallographic Association (AsCA) 2024 Conference, Kuala Lumpur Convention Centre, Malaysia. (<https://www.asca2024.com/>), December 1-6, 2024.