

Curriculum Vitae Chuo Chen

Department of Biochemistry
The University of Texas Southwestern Medical Center
5323 Harry Hines Boulevard, Dallas, TX 75390-9038

Tel: (214) 648-5048
Fax: (214) 648-0320
E-mail: Chuo.Chen@UTSouthwestern.edu

Research Interest

Our research involves the use of chemical approaches to modulate protein functions. The goal of our current research programs is to develop new small-molecule drugs targeting the STING, Wnt, and PARP signaling pathways. Our previous work includes total syntheses of various complex natural products, development of vanadium- and triplet ketone-catalyzed C–H functionalization reactions, and design of small-molecule Hh inhibitors.

Education

B.S. in Chemistry (1995)
Advisor: Prof. Tien-Yau Luh
National Taiwan University, Taipei, Taiwan, ROC

Ph.D. in Chemistry (2001)
Advisor: Matthew D. Shair
Harvard University, Cambridge, Massachusetts

Postdoctoral Research Associate (2001–2004)
Advisor: Stuart L. Schreiber
Howard Hughes Medical Institute
Department of Chemistry, Harvard University, Cambridge, Massachusetts

Employment

The University of Texas Southwestern Medical Center, Dallas, Texas
Department of Biochemistry
Assistant Professor (2004–2010)
Associate Professor (2010–2015)
Professor (2015–present)

Honors and Other Positions

Obligatory Military Service, Taiwan, ROC (1995–1997)
Southwestern Medical Foundation Scholar in Biomedical Research (2004)
Synlett and Synthesis Journal Award (2009)
Chinese Academy of Sciences overseas advisory expert (2016)
CN Yang Scholar, Nanyang Technological University (2016)
Visiting Professor, KAUST (2019)
Editorial Board, Green Synthesis and Catalysis (2019–present)
Scientific Advisory Board, ImmuneSensor Therapeutics (2019–present)

Publications

1. Johnston, A.; Ma, Y.; Liu, H.; Liu, S.; Hanna-Addams, S.; Chen, S.; Chen, C.; Wang, Z. Novel Necroptosis-blocking Compound NBC1 Targets Heat Shock Protein 70 to Inhibit MLKL Polymerization and Necroptosis. *Proc. Natl. Acad. Sci.* **2020**, *117*, 6521–6530.

- Wang, S.; Han, L.; Han, J.; Li, P.; Ding, Q.; Zhang, Q.-J.; Liu, Z.-P.; Chen, C.; Yu, Y. Uncoupling of PARP1 Trapping and Inhibition Using Selective PARP1 Degradation. *Nat. Chem. Biol.* **2019**, *15*, 1223–1231.
- Tuladhar, R.; Yarravarapu, N.; Ma, Y.; Zhang, C.; Herbert, J.; Kim, J.; Chen, C.; Lum, L. Stereoselective Fatty Acylation Is Essential for the Release of Lipidated WNT Proteins from the Acyltransferase Porcupine (PORCN). *J. Biol. Chem.* **2019**, *294*, 6273–6282.
- Zhang, L.-s.; Kang, X.; Lu, J.; Zhang, Y.; Wu, X.; Wu, G.; Zheng, J.; Tuladhar, R.; Shi, H.; Wang, Q.; Morlock, L.; Yao, H.; Huang, L. J.-s.; Maire, P.; Kim, J.; Williams, N.; Xu, J.; Chen, C.; Zhang, C. C.; Lum, L. Installation of a Cancer Promoting WNT/SIX1 Signaling Axis by the Oncofusion Protein MLL-AF9. *EBioMedicine* **2019**, *39*, 145–158.
- You, L.; Chen, C. Rapid Access to the Core Skeleton of the [3 + 2]-Type Dimeric Pyrrole–Imidazole Alkaloids by Triplet Ketone-Mediated C–H Functionalization (Invited Article for Tetrahedron Symposium-in-Print "Biogenetic Considerations in Complex Synthesis"). *Tetrahedron* **2018**, *74*, 769–772.
- Ma, Z.; Chen, C. Natural Products as Inspiration for the Development of New Synthetic Methods (Invited Article in honor of Prof. Tien-Yau Luh's 70th Birthday). *J. Chin. Chem. Soc.* **2018**, *65*, 43–59.
- Fan, C. W.; Yarravarapu, N.; Shi, H.; Kulak, O.; Kim, J.; Chen, C.; Lum, L. A Synthetic Combinatorial Approach to Disabling Deviant Hedgehog Signaling. *Sci. Rep.* **2018**, *8*, 1133.
- Han, L.; Xia, J.-B.; You, L.; Chen, C. Ketone-Catalyzed Photochemical C(sp³)–H Chlorination (Invited Article in honor of Prof. Ang Li's 2017 Tetrahedron Young Investigator Award). *Tetrahedron* **2017**, *73*, 3696–3701.
- Wang, H.; Hu, S.; Chen, X.; Shi, H.; Chen, C.; Sun, Li; Chen, Z. J. cGAS Is Essential for the Antitumor Effect of Immune Checkpoint Blockade. *Proc. Natl. Acad. Sci.* **2017**, *114*, 1637–1642.
- Ma, Z.; You, L.; Chen, C. Stereocontrolled Formation of a [4.4]-Heterospiro Ring System with Unexpected Inversion of Configuration at the Spirocenter. *J. Org. Chem.* **2017**, *82*, 731–736.
- You, L.; Zhang, C.; Yarravarapu, N.; Morlock, L.; Wang, X.-L.; Zhang, L.; Williams, N. S.; Lum, L.; Chen, C. Development of a Triazole Class of Highly Potent Porcn Inhibitors. *Bioorg. Med. Chem. Lett.* **2016**, *26*, 5891–5895.
- Zhang, C.; You, L.; Chen, C. Palladium-Catalyzed C–H Arylation of 1,2,3-Triazoles (Invited Article for the Reactions of Hydrocarbons and other C-H Compounds Special Issue). *Molecules* **2016**, *20*, 1268.
- Chen, C. The Past, Present, and Future of the Yang Reaction (Invited Review Article). *Org. Biomol. Chem.* **2016**, *14*, 8641–8647.
- Ma, Z.; Wang, X.; Ma, Y.; Chen, C. Asymmetric Synthesis of Axinellamines A and B. *Angew. Chem. Int. Ed.* **2016**, *55*, 4763–4766.
- Lum, L.; Chen, C. Chemical Disruption of Wnt-Dependent Cell Fate Decision-Making Mechanisms in Cancer and Regenerative Medicine (Invited Review Article). *Curr. Med. Chem.* **2015**, *22*, 4091–4103.
- Lomenick, B.; Shi, H.; Huang, J.; Chen, C. Identification and Characterization of β -Sitosterol Target Proteins (Invited Article for the 25th Anniversary Symposium-in-Print "Recent Advances in Medicinal Chemistry and Chemical Biology"). *Bioorg. Med. Chem. Lett.* **2015**, *25*, 4976–4979.
- Fu, X.; Chin, R. M.; Vergnes, L.; Hwang, H.; Deng, G.; Xing, Y.; Pai, M. Y.; Li, S.; Ta, L.; Fazlollahi, F.; Chen, C.; Prins, R. M.; Teitell, M. A.; Nathanson, D. A.; Lai, A.; Faull, K. F.; Jiang, M.; Clarke, S. G.; Cloughesy, T. F.; Graeber, T. G.; Braas, D.; Christofk, H. R.; Jung, M. E.; Reue, K.; Huang, J. 2-Hydroxyglutarate Inhibits ATP Synthase and mTOR Signaling. *Cell Metab.* **2015**, *22*, 508–515.

18. Shi, H.; Wu, J.; Chen, Z. J.; Chen, C. Molecular Basis for the Specific Recognition of the Metazoan Cyclic GMP-AMP by the Innate Immune Adaptor Protein STING. *Proc. Natl. Acad. Sci.* **2015**, *112*, 8947–8952.
19. Wang, X.-L.; Gao, Y.; Ma, Z.; Rodriguez, R. A.; Yu, Z.-X.; Chen, C. Syntheses of Sceptrings and Nakamuric Acid and Insights into the Biosyntheses of Pyrrole–Imidazole Dimers. *Org. Chem. Front.* **2015**, *2*, 978–984.
20. Kulak, O.; Chen, H.; Holohan, B.; Wu, X.; He, H.; Borek, D.; Otwinowski, Z.; Yamaguchi, K.; Garofalo, L. A.; Ma, Z.; Wright, W.; Chen, C.; Shay, J. W.; Zhang, X.; Lum, L. Disruption of Wnt/ β -Catenin Signaling and Telomeric Shortening Are Inextricable Consequences of Tankyrase Inhibition in Human Cells. *Mol. Cell Biol.* **2015**, *35*, 2425–2435.
21. Shi, H.; De, S.; Wang, Q.; Gao, S.; Wang, X.; Chen, C. Construction of the 5,6,7-tricyclic skeleton of lancifodilactone F (Invited Article for the Tetrahedron Letters Symposium in Print in Memory of Harry Wasserman). *Tetrahedron Lett.* **2015**, *56*, 3225–3227.
22. Wang, X.-L.; Chen, C. An Approach for the Synthesis of Nakamuric Acid (Invited Article for the Tetrahedron Symposium-in-Print on Synthesis of Indole/Pyrrole-Containing Natural Products). *Tetrahedron* **2015**, *71*, 3690–3693.
23. Ma, Y.; De, S.; Chen, C. Syntheses of Cyclic Guanidine-Containing Natural Products (Invited Review Article). *Tetrahedron* **2015**, *71*, 1145–1173.
24. Fan, C.-W.; Chen, B.; Franco, I.; Lu, J.; Shi, H.; Wei, S.; Wang, C.; Wu, X.; Tang, W.; Roth, M. G.; Williams, N. S.; Hirsch, E.; Chen, C.; Lum, L. The Hedgehog Pathway Effector Smoothed Exhibits Signaling Competency in the Absence of Ciliary Accumulation. *Chem. Biol.* **2014**, *21*, 1680–1689.
25. Ma, Z.; Wang, X.-L.; Wang, X.; Rodriguez, R. A.; Moore, C. E.; Gao, S.; Tan, X.; Ma, Y.; Rheingold, A. L.; Baran, P. S.; Chen, C. Asymmetric Syntheses of Sceptring and Massadine and Evidence for Biosynthetic Enantiodivergence. *Science* **2014**, *346*, 219–224.
26. Xia, J.-B.; Zhu, C.; Chen, C. Visible light-promoted metal-free sp^3 -C–H fluorination. *Chem. Commun.* **2014**, *50*, 11701–11704.
27. Wang, X.; Ma, Z.; Wang, X.-L.; De, S.; Ma, Y.; Chen, C. Dimeric Pyrrole–Imidazole Alkaloids: Synthetic Approaches and Biosynthetic Hypotheses (Invited Review Article). *Chem. Commun.* **2014**, *50*, 8628–8639.
28. Xia, J.-B.; Ma, Y.; Chen, C. Vanadium-Catalyzed C(sp^3)–H Fluorination Reactions. *Org. Chem. Front.* **2014**, *1*, 468–472.
29. Zhu, C.; Xia, J.-B.; Chen, C. A Simple Method for the Electrophilic Cyanation of Secondary Amines. *Org. Lett.* **2014**, *16*, 247–250.
30. Zhu, C.; Xia, J.-B.; Chen, C. Vanadium-Catalyzed Oxidative Strecker Reaction: α -C–H Cyanation of para-Methoxyphenyl (PMP)-Protected Primary Amines. *Tetrahedron Lett.* **2014**, *55*, 232–234.
31. Xia, J.-B.; Zhu, C.; Chen, C. Visible Light-Promoted Metal-Free C–H Activation: Diarylketone-Catalyzed Selective Benzylic Mono- and Difluorination. *J. Am. Chem. Soc.* **2013**, *135*, 17494–17500.
32. Das, A.; Tanigawa, S.; Karner, C. M.; Xin, M.; Lum, L.; Chen, C.; Olson, E. N.; Perantoni, A. O.; Carroll, T. J. Stromal-epithelial crosstalk regulates kidney progenitor cell differentiation. *Nat. Cell Biol.* **2013**, *15*, 1035–1044.
33. Zhang, X.; Shi, H.; Wu, J.; Zhang, X.; Sun, L.; Chen, C.; Chen, Z. J. Cyclic GMP-AMP Containing Mixed Phosphodiester Linkages Is An Endogenous High Affinity Ligand for STING. *Mol. Cell* **2013**, *51*, 226–235.
34. Wang, X.-L.; Moon, J.; Dodge, M. E.; Pan, X.; Zhang, L.; Hanson, J.; Tuladhar, R.; Ma, Z.; Shi, H.; Williams, N. S.; Amatruda, J.; Carroll, T. J.; Lum, L.; Chen, C. The Development of Highly Potent Inhibitors for Porcupine. *J. Med. Chem.* **2013**, *56*, 2700–2704.

35. Wu, J.; Sun, L.; Chen, X.; Du, F.; Shi, H.; Chen, C.; Chen, Z. J. Cyclic-GMP-AMP Is an Endogenous Second Messenger in Innate Immune Signaling by Cytosolic DNA. *Science* **2013**, *339*, 826–830.
36. Gao, S.; Chen, C. Nakiterpiosin (Invited Book Chapter). In *Total Synthesis of Natural Products—At the Frontiers of Organic Chemistry*; Li, J. J., Corey, E. J., Eds.; Springer-Verlag: Berlin/Heidelberg, 2013; pp 25–38.
37. Wang, X.; Wang, X.-L.; Tan, X.; Lu, J.; Cormier, K. W.; Ma, Z.; Chen, C. A Biomimetic Route for the Construction of the [4+2] and [3+2] Core Skeletons of the Dimeric Pyrrole-Imidazole Alkaloids and the Asymmetric Synthesis of Agelifेरins. *J. Am. Chem. Soc.* **2012**, *134*, 18834–18842.
38. Gao, S.; Wang, Q.; Wang, G.; Lomenick, B.; Liu, J.; Fan, C.-W.; Deng, L.-W.; Huang, J.; Lum, L.; Chen, C. The Chemistry and Biology of Nakiterpiosin (Invited Review Article). *Synlett* **2012**, *23*, 2298–2310.
39. Xia, J.; Cormier, K. W.; Chen, C. A Highly Selective Vanadium Catalyst for Benzylic C–H Oxidation. *Chem. Sci.* **2012**, *3*, 2240–2245.
40. Dodge, M. E.; Moon, J.; Tuladhar, R.; Lu, J.; Jacob, L. S.; Zhang, L.-s.; Shi, H.; Wang, X.-L.; Moro, E.; Mongera, A.; Argenton, F.; Karner, C. M.; Carroll, T. J.; Chen, C.; Amatruda, J. F.; Lum, L. Diverse Chemical Scaffolds Support Direct Inhibition of the Membrane Bound O-Acyltransferase Porcupine. *J. Biol. Chem.* **2012**, *287*, 23246–23254.
41. Moro, E.; Ozhan-Kizil, G.; Mongera, A.; Beis, D.; Wierzbicki, C.; Young, R. M.; Bournele, D.; Domenichini, A.; Valdivia, L. E.; Lum, L.; Chen, C.; Amatruda, J. F.; Tiso, N.; Weidinger, G.; Argenton, F. *In Vivo* Wnt Signaling Tracing through a Transgenic Biosensor Fish Reveals Novel Activity Domains. *Dev. Biol.* **2012**, *366*, 327–340.
42. Wang, X.; Ma, Z.; Lu, J.; Tan, X.; Chen, C. Asymmetric Synthesis of Ageliferin. *J. Am. Chem. Soc.* **2011**, *133*, 15350–15353.
43. Karner, C. M.; Das, A.; Self, Z. M. M.; Chen, C.; Lum, L.; Oliver, G.; Carroll, T. J. Canonical Wnt9b Signaling Balances Progenitor Cell Expansion and Differentiation During Kidney Development. *Development* **2011**, *138*, 1247–1257.
44. Ma, Z.; Lu, J.; Wang, X.; Chen, C. Revisiting the Kinnel–Scheuer hypothesis for the biosynthesis of palau’amine (Invited Article for the Emerging Investigator Special Issue). *Chem. Commun.* **2011**, *47*, 427–429.
45. Karner, C. M.; Merkel, C. E.; Dodge, M. E.; Ma, Z.; Lu, J.; Chen, C.; Lum, L.; Carroll, T. J. Tankyrase Is Necessary for Canonical Wnt Signaling During Kidney and Lung Development. *Dev. Dyn.* **2010**, *239*, 2014–2023.
46. Gao, S.; Wang, Q.; Huang, L. J.; Lum, L.; Chen, C. Chemical and Biological Studies of Nakiterpiosin and Nakiterpiosinone. *J. Am. Chem. Soc.* **2010**, *132*, 371–383.
47. Lu, J.; Ma, Z.; Hsieh, J.-C.; Chen, B.; Fan, C.-W.; Williams, N. S.; Amatruda, J. F.; Lum, L.; Chen, C. Structural–Activity Relationship Studies of Small-Molecule Inhibitors of the Wnt Signaling Pathway (Invited Article in Honor of Prof. Barbas III’s 2009 Tetrahedron Young Investigator Award in Bioorganic and Medicinal Chemistry). *Bioorg. Med. Chem. Lett.* **2009**, *19*, 3825–3827.
48. Chen, B.; Dodge, M. E.; Tang, W.; Lu, J.; Ma, Z.; Fan, C.-W.; Wei, S.; Hao, W.; Kilgore, J. A.; Williams, N. S.; Roth, M. G.; Amatruda, J. F.; Chen, C.; Lum, L. Small Molecule-mediated Disruption of Wnt-dependent Signal Transduction in Tissue Regeneration and Cancer. *Nat. Chem. Biol.* **2009**, *5*, 100–107.
49. Gao, S.; Wang, Q.; Chen, C. Synthesis and Structure Revision of Nakiterpiosin. *J. Am. Chem. Soc.* **2009**, *131*, 1410–1412.
50. Chen, C. On Potent Inhibitors of the Hedgehog Signaling Pathway (Invited Condensation and Commentary). *Chemtracts–Org. Chem.* **2008**, *21*, 150–154.
51. Wang, Q.; Chen, C. Nickel-Catalyzed Carbonylative Negishi Cross-Coupling Reactions. *Tetrahedron Lett.* **2008**, *49*, 2916–2921.

52. Wang, Q.; Chen, C. An Approach to the Core Skeleton of Lancifodilactone F. *Org. Lett.* **2008**, *10*, 1223–1226.
53. Lu, J.; Tan, X.; Chen, C. Palladium-Catalyzed Direct Functionalization of Imidazolinone: Synthesis of Dibromophakellstatin. *J. Am. Chem. Soc.* **2007**, *129*, 7768–7769.
54. Tan, X.; Chen, C. Regiocontrol in Manganese(III)-Mediated Oxidative Heterobicyclizations: Access to the Core Skeletons of Oroidin Dimers. *Angew. Chem. Int. Ed.* **2006**, *45*, 4245–4348.
55. Chen, C.; Li, X.; Neumann, C. S.; Lo, M. M.-C.; Schreiber, S. L. Convergent Diversity-Oriented Synthesis of Small-Molecule Hybrids. *Angew. Chem. Int. Ed.* **2005**, *44*, 2249–2252.
56. Wang, W. U.; Chen, C.; Lin, K.-h.; Fang, Y.; Lieber, C. M.; Label-free Detection of Small-molecule–protein Interactions by Using Nanowire Nanosensors. *Proc. Natl. Acad. Sci. U.S.A.* **2005**, *102*, 3208–3212.
57. Chen, C.; Li, X.; Schreiber, S. L. Catalytic Asymmetric [3+2] Cycloaddition of Azomethine Ylides. Development of a Versatile Stepwise, Three-Component Reaction for Diversity-Oriented Synthesis. *J. Am. Chem. Soc.* **2003**, *125*, 10174–10175.
58. Ho, T.-L.; Chang, M.; Chen, C. Abnormal and Regioselective Wacker Oxidation of 1,5-Diene. *Tetrahedron Lett.* **2003**, *44*, 6955–6957.
59. Chen, C.; Layton, M. E.; Sheehan, S. M.; Shair, M. D. Synthesis of (+)-CP-263,114. *J. Am. Chem. Soc.* **2000**, *122*, 7424–7425.
60. Cheng, W.-L.; Shaw, Y.-J.; Yeh, S.-M.; Kanakamma, P. P.; Chen, Y.-H.; Chen, C.; Shieu, J.-C.; Yiin, S.-J.; Lee, G.-H.; Wang, Y.; Luh, T.-Y. Chelation-Assisted Regioselective C–O Bond Cleavage Reactions of Acetals by Grignard Reagents. A General Procedure for the Regioselective Synthesis of Protected Polyols Having One Free Hydroxy Group. *J. Org. Chem.* **1999**, *64*, 532–539.
61. Chen, C.; Layton, M. E.; Shair, M. D. Stereospecific Synthesis of the CP-263,114 Core Structure. *J. Am. Chem. Soc.* **1998**, *120*, 10784–10785.

Patents

1. Yu, Y.; Chen, C.; Wang, S.; Han, L.; Lin, Y. Trapping-free PARP Inhibitors. US/2020/016129, Jan. 31, 2020.
2. Nageswari, Y.; Chen, C.; Lum, L.; Lin, Y.; Zhang, C.; Wang, X.; Zhang, L. Disubstituted and trisubstituted 1,2,3-Triazole as Wnt Inhibitors. WO/2018/045182, Mar. 8, 2018.
3. Zhong, B.; Sun, L.; Shi, H.; Li, J.; Chen, C.; Chen, Z. cGAS Antagonist Compounds. WO/2017/176812, Apr. 4, 2017.
4. Zhong, B.; Sun, L.; Wei, Q.; Dai, Y.; Chen, C.; Chen, Z. Cyclic Di-nucleotide Compounds and Methods of Use. WO/2017/161349, Mar. 17, 2017.
5. Lum, L.; Chen, C.; Zhang, X.; Kulak, O.; Wu, X.; Indolinylnyl-sulfonamide Inhibitors of Tankyrase and Methods of Use Thereof. WO/2016/179066, Nov. 10, 2016.
6. Zhang, C.; Liu, Y.; Zheng, J.; Deng, M.; Chen, C.; Liu, J. Novel Compounds Supports Hematopoietic Stem Cells and Red Blood Cells. WO/2015/183545, Dec. 3, 2015.
7. Lum, L.; Chen, C. Highly Potent Inhibitors of Porcupine. WO/2014/186450, 2014, Nov. 20, 2014.
8. Chen, Z.; Sun, L.; Wu, J.; Shi, H.; Chen, C. Pharmaceutical Targeting of a Mammalian Cyclic Di-Nucleotide Signaling Pathway. WO/2014/099824, Jun. 26, 2014.
9. Lum, L.; Roth, M. G.; Chen, B.; Dodge, M. E.; Chen, C.; Wnt Protein Signaling Inhibitors. WO/2013/169631, Nov. 14, 2013.
10. Lum, L.; Roth, M. G.; Chen, B.; Chen, C.; Dodge, M. E.; Tang, W. Wnt Protein Signaling Inhibitors. WO/2009/155001, Dec. 23, 2009.
11. Wang, W. U.; Chen, C.; Lin, Fang, Y.; Lieber, C. M. Nanosensors. WO/2006/107312, Oct. 12, 2006.
12. Lindsley, C. W.; Chen, C.; Shair, M. D.; Westwood, N. J.; Chan, L. K.; Pelish, H. E.; Sheehan, S. M.; Goess, B. C.; Layton, M. E. Biomimetic Combinatorial Synthesis of Polycyclic Natural Products. WO/1999/064379, Dec. 16, 1999.

Invited Lectures

CAS Workshop, Shanghai, 11/15/17; Zhengzhuo Chemistry Workshop, Zhengzhuo, 9/25/17; TexSyn III, Dallas, 5/20/17; The 14th International Symposium for Chinese Organic Chemists, Singapore, 12/9/16; The 12th International Symposium on Organic Free Radicals, Shanghai, 10/11/16; Mini-symposium for Organometallics and Synthesis, Taipei, 5/30/16; The 13th International Symposium for Chinese Organic Chemists, Xiamen, 12/21/14; International Symposium on Natural Product Synthesis and Process Methods for Drug Manufacture, Nanjing, China, 9/23/14; KAUST-Symposium on Functional Molecules and Materials, Jeddah, Saudi Arabia, 12/17/13; The 9th Sino-US Chemistry Professors Conference, Chengdu, China, 7/14/13; ACS DFW Young Investigator Symposium, Dallas, 1/29/11; Bristol-Myers Squibb Symposium, Harvard University, 11/16/09; ACS Young Academic Investigators Symposium, Washington DC, 8/17/09; Natural Products Gordon Research Conference, 7/28/09; The 10th International Symposium for Chinese Organic Chemists, Shanghai, 7/30/08; The 9th International Symposium for Chinese Organic Chemists, Singapore, 12/18/06.

McGill University, 3/24/20; Shanghai Institute of Organic Chemistry, 8/16/18; Midwestern State University, 4/13/18; University of Arkansas for Medical Sciences, 10/13/17; North Carolina State University, 10/09/17; University of Texas at Dallas, 10/21/16; Shanghai Institute of Organic Chemistry, 10/10/16; University of Texas at Arlington, 9/11/15; Moffitt Cancer Center, 7/14/15; National Taiwan University, 6/12/15; Moffitt Cancer Center, 5/13/15; China East Normal University, 9/26/14; Shanghai Institute of Organic Chemistry, 9/25/14; Purdue University, 1/23/14; East China University of Science and Technology, 7/17/13; Shanghai Institute of Organic Chemistry, 7/16/13; East China Normal University, 7/15/13; West China School of Pharmacy, Sichuan University, 7/12/13; Innovative Drug Research Center, Chongqing University, 7/11/13; Lanzhou University, 7/10/13; Nankai University, 7/8/13; The State Key Laboratory of Natural and Biomimetic Drugs, Peking University, 7/5/13; Tsinghua University, 7/5/13; Peking University, 7/4/13; National Institute of Biological Sciences, Beijing, 7/3/13; Nanjing University, 7/2/13; Suzhou University, 7/1/13; National Taiwan University, 6/28/13; University of New Mexico, 4/5/13; Georgia State University, 02/01/2013; University of Wisconsin Madison, 10/30/2012; Massachusetts Institute of Technology, 10/04/11; University of Minnesota, 3/22/11; Texas A&M University, 11/4/10; University of Texas at Austin, 9/17/10; Wayne State University, 2/17/2010; National Taiwan University, 12/28/09; Shanghai Institute of Organic Chemistry, 12/15/09; Vanderbilt University, 11/2/09; Brandeis University, 9/14/09; University of Illinois at Chicago, 4/21/09; University of Wisconsin at Madison, 4/20/09; Scripps Research Institute, 4/10/09; West Virginia University, 2/18/09; University of Colorado at Boulder, 10/6/08; University of New Mexico, 9/14/07; Washington State University, 8/27/07; National Taiwan University, 12/28/05; Genomics Research Center at Academia Sinica, 12/19/05.

Amgen, 05/29/13; Sanofi-Aventis, 10/05/11; Merck & Co., 9/16/09; Eli Lilly, 7/14/09; Bristol-Myers Squibb, 6/16/09.

Research SupportsCurrent

NIH/NCI	R01 CA226419 (Chen)	12/1/2018–11/30/2023
Explore the Therapeutic Potential of Small-molecule Immune Modulators		

NIH/NIGMS	R21 GM137179 (Chen)	5/1/2020–4/30/2022
A New Chemical Technology for Biological Studies and Therapeutic Applications		

NIH/NHLBI	R01 HL138426 (Bassel–Duby)	8/1/2017–6/30/2021
-----------	----------------------------	--------------------

Chemically Assisted Remodeling of Infarcted Heart Tissue by Targeting Wnt Lipidation

CPRIT PR180725 (Fu) 8/31/2018–8/30/2022
Targeting Tumor Tissues Increases DNA Sensing to Bridge Innate and Adaptive Immunity

CPRIT PR170267 (Zhu) 8/1/2017–8/30/2020
Chemically Based Disruption of Oncogenic β -Catenin Activity in Liver Tissue

Completed

NIH/NIGMS R01 GM079554 (Chen) 1/1/2007–5/31/2018
Asymmetric Synthesis of Biologically Active Marine Natural Products

NIH/NCCAM R01 AT006889 (Chen and Huang) 8/1/2011–6/30/2018
Identifying Molecular Targets and Biological Signatures of CAM Natural Products

NIH/NICHD R21 HD061303 (Lum, Amatruda and Chen) 9/1/2009–8/31/2011
Chemical Disruption of the Hh and Wnt Pathways in Vertebrate Development

Welch Foundation I-1596 (Chen) 6/1/2005–8/31/2014
Synthesis of Massadine Core Skeleton (2005–2008)
Synthesis of Lancifodilactone F and Buxapentalactone (2008–2011)
Mechanistic Studies on the Vanadium-Catalyzed C–H Hydroxylation Reactions (2011–2014)

Welch I-1868 (Chen) 6/1/2015–5/31/2018
Development of Anticancer Immunotherapeutic Agents

NIH/NCI R01 CA168761 (Lum/Kim) 4/1/2013–3/31/2018
Chemical Disruption of Wnt-mediated Signal Transduction

CPRIT RP100119/RP130212 (Lum) 2/1/2010–5/30/2017
A molecularly targeted anticancer therapeutic strategy premised upon attack of aberrant Wnt pathway responses

Teaching PortfolioGraduate School Teaching

DBS Core Course term paper projects (2004–2007)
Small Molecule Structure and Elucidation (2004–2006)
Chemical Structure and Reactivity I/II (2005–2010, 2013)
Chemical Synthesis I/II (2005–2014)
Advanced Synthesis and Catalysis (2004–2005, 2012–2019)
Advanced Problems in Reaction Mechanisms (2008–2019)

Student Mentoring

1 Graduate student
20 Postdoctoral research fellows
9 Summer undergraduate students
5 Summer high school students