KEVIN S. HUANG, PH.D.

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ACADEMIC POSITIONS

Honors College Faculty Fellow 2020-present
Azusa Pacific University
Honors College

Associate Professor of Chemistry 2009-present
Azusa Pacific University
Department of Biology & Chemistry

Director of Undergraduate Research 2007-2016
Azusa Pacific University
Office of Research & Grants

Assistant Professor of Chemistry 2006-2009
Azusa Pacific University
Department of Biology & Chemistry

EDUCATION

National Institute of Health Postdoctoral Fellow 2002-2006
Yale University, New Haven, CT,
Advisor: Dr. Scott A. Strobel, Department of Molecular Biophysics & Biochemistry
Elucidating the mechanism of the ribosome catalyzed protein synthesis machinery

Ph.D. Organic Chemistry 1996-2002
University of California, Davis
Advisor: Dr. Mark J. Kurth, Department of Chemistry
Organic synthesis, reaction mechanism, and spectroscopy of heterocycles

B.S. Chemistry 1991-1996
University of California, Irvine
Undergraduate research theses:

- Synthesis of amino acid ester isocyanates for the construction of artificial β-sheets.
  Research Advisor: Dr. James S. Nowick, Department of Chemistry
- Role of neuropeptide Y in the rat tail artery.
  Research Advisor: Dr. Susan P. Duckles, Department of Pharmacology

RESEARCH INTERESTS

Biological chemistry and organic synthesis of heterocycles. Team-based learning pedagogy in chemical education.

PROFESSIONAL ORGANIZATION

- American Chemical Society, 1997-present.
- The American Scientific Affiliation, 2020-present.

ORCID ID# http://orcid.org/0000-0002-9930-0972

PEER-REVIEWED PUBLICATIONS

12. Amelia N. Gray[1], Breeana M. Ramirez[1], Selom K. Mawugbe[1], Jordan F. Mar[1], Yun-Lan C. Wong, and Kevin S. Huang. Functionalized Spirocyclic Heterocycle Synthesis and Cytotoxicity Assay, *Journal of Visualized Experiments*, **2021**, 168, e61950 ([1]undergraduates)

11. Cody R. Drisko[1], Silas A. Griffin[1], and Kevin S. Huang. Solid phase synthesis of [4.4] spirocyclic oximes, *Journal of Visualized Experiments*, **2019**, 144, e58508 ([1]undergraduates).

10. Silas A. Griffin[1], Cody R. Drisko[1], and Kevin S. Huang. Tricyclic heterocycles as precursors to functionalized spirocyclic oximes, *Tetrahedron Letters*, **2017**, 58, 4551-4553 ([1]undergraduates).

9. Kevin S. Huang,* Nicolas Carrasco,* Emmanuel Pfund, and Scott A. Strobel. Transition state chirality and role of the vicinal hydroxyl in the ribosomal peptidyl transferase reaction, *Biochemistry*, **2008**, *47*, 8822-8827 (*these authors contributed equally).

8. Kevin S. Huang, Joshua S. Weinger, Ethan B. Butler, and Scott A. Strobel. Regiospecificity of the peptidyl tRNA ester within the ribosomal P-site, *Journal of the American Chemical Society*, **2006**, *128*, 3108-3109.

7. T. Martin Schmeing, Kevin S. Huang, Scott A. Strobel, and Thomas A. Steitz. An induced fit mechanism to promote peptide bond formation and exclude hydrolysis of peptidyl-tRNA, *Nature*, **2005**, *438*, 520-524.

6. T. Martin. Schmeing,* Kevin S. Huang,* Scott A. Strobel, and Thomas A. Steitz. The mechanism of peptidyl transferase as defined by the structure of improved ground and transition state complexes with the 50S subunit, *Molecular Cell*, **2005**, *20*, 437-448 (*these authors contributed equally).

5. Kevin S. Huang, Makhluf J. Haddadin, and Mark J. Kurth. Imidazo- and Pyridolpyrimidium bromides: synthesis and hydrolysis, *Journal of Organic Chemistry*, **2002**, *67*, 2382-2385.

4. Kevin S. Huang, Makhluf J. Haddadin, Marilyn M. Olmstead, and Mark J. Kurth. Synthesis and reactions of some heterocyclic azacyanines, *Journal of Organic Chemistry*, **2001**, *66*, 1310-1315.

3. Kevin S. Huang, Edwin H. Lee[1], Marilyn M. Olmstead, and Mark J. Kurth. Sequential 1,3-dipolar cycloadditions in the synthesis of bis-isoxazolo substituted piperidinones, *Journal of Organic Chemistry* 2000, *65*, 499-503 ([1]undergraduate).

2. James S. Nowick, Darren L. Holmes, Glenn Noronha, Eric M. Smith, Tram M. Nguyen[1], and Sheng-Lin Huang[1]. Synthesis of peptide isocyanates and isothiocyanates, *Journal of Organic Chemistry*, **1996**, *61*, 3929-3934 ([1]undergraduates).

1. Thomas C. Glenn, Sheng-Lin Huang[1], and Sue P. Duckles. Cocaine promotes an apparent direct vasoconstrictor effect of neuropeptide Y in the rat-tail artery, *European Journal of Pharmacology*, **1995**, *276*, 191-194 ([1]undergraduate).

[2].

ACADMEIC AND PUBLIC SERVICES

- Young Life Mt Baldy Capernaum Board Member, Glendora, CA 2021-present
- Diversity, Equity, and Inclusion (DEI) Working Groupon Campus Climate RENEWAL strategic plan, Azusa Pacific University 2020-2021
- Faculty Evaluation Council, Azusa Pacific University 2020-present
- Sabbatical Contingency Plan Workgroup, Azusa Pacific University 2020
- University Academic Vision Goals Committee, Azusa Pacific University 2019
- John Stauffer Fellowship and Charitable Trust Grant Committee Member 2014-present
- Diversity Council, Azusa Pacific University 2019-2020
- Faith Integration Council, Azusa Pacific University 2019
- Faculty Senate, Azusa Pacific University
    - CLAS Senator at Large 2016-2020
    - Steering Committee – Senate Representative 2018-2019
    - Steering Committee – Historian 2016-2018
    - CLAS Senator 2014-2016
- Scholarfest (Research, Scholarship, and Creative Arts) Advisory Committee 2019-2020
- Faculty Research Council, , Azusa Pacific University
    - CLAS Senate Liaison 2015-2020
    - Member 2007-2020
- Director of Undergraduate Research, , Azusa Pacific University 2007-2016
- Undergraduate Research Mentor, Azusa Pacific University 2006-present

EXTERNAL GRANTS

5. *John Stauffer Charitable Trust* *2009*
   Funding to support chemistry/biochemistry undergraduate research experience
   Collaboration with Advancement and Office of Research and Grant

4. *American Chemical Society (ACS) Project SEED* 2009
   Anthropomorphic Molecules Revisited
   $1,000

3. *American Chemical Society (ACS) Project SEED* 2008
   Synthesis of Azacyanines.
   $1,000

2. *American Chemical Society (ACS) Project SEED* 2007
   Role of Organic Synthesis in Drug Discovery
   $1,000

1. *NIH Postdoctoral Fellowship* 2004-2006
   Elucidating the Mechanism of the Ribosome. National Institute of Health (NIH) and the National Institute of General Medical Sciences (NIGMS).
   $91,000, Grant F32GM071209

INTERNAL GRANTS

18. *President's Enhancement Grant - Research* 2021
An interdisciplinary strategy employing spirocyclic compounds as anti-cancer drugs
To inhibit the p53-MDM2 interaction
Kevin Huang (PI) and Jon Milhon (Co-PI)
$36,672

17. *President's Enhancement Grant - Teaching* 2021
Pilot Study for Effectiveness of Learning Assistants on Student Engagement
Bradly McCoy (PI), Elijah Roth, Tom Albaugh, Sharon McCathern, Marian Saleh, & Kevin Huang
$30,000

16. *Richter Scholars Research Grant* 2021
Exploring the rational drug design process in the synthesis and evaluation of novel spirocyclic small compounds
College of Liberal Arts and Sciences
Tiffany Nakla (undergraduate) and Kevin Huang (PI)
$5,000

15. *Center for Research in Science STEM Research Fellowship* 2020
Analysis of the structural motif of spirocyclic compounds
Tiffany Nakla (undergraduate) and Kevin Huang (PI)
$500

14. *Center for Research in Science Interdisciplinary Project Seed Funding* 2020
Using biology-chemistry interdisciplinary strategy in designing potential anti-cancer drug candidates
Kevin Huang (PI) and Jon Milhon (Co-PI)
$1000

13. *Faculty Research Council Grant* 2020
Design, & biochemical evaluation of spirocyclic motifs as potential anticancer agents
Kevin Huang (PI)
$6,000

12. *Center for Research in Science STEM Research Fellowship* 2019
Regenerative Michael Linker in the Spirocyclic Oximes synthesis.
Selom Mawugbe (undergraduate) and Kevin Huang (PI)
$500

11. *Scholarly Undergraduate Research Experience (SURE) Grant* 2019
Progress towards an efficient synthesis of allicin.
Amelia Gray (undergraduate) and Kevin Huang (PI)
$1,500

10. *Faculty Research Council Publication Assistance Grant* 2018
Solid phase synthesis of [4.4]spirocyclic oximes.
Kevin Huang (PI)
$2,400

9. *Scholarly Undergraduate Research Experience (SURE) Grant* 2018
Spirocyclic heterocycles as potential drug candidates for the treatment of cancer cells.
Jordan Mar (undergraduate) and Kevin Huang (PI)
$1,500

8. *Center for Research in Science STEM Research Fellowship* 2018
Measuring the cytotoxicity of spirocyclic molecules
Amelia Gray (undergraduate) and Kevin Huang (PI)
$500

7. *Center for Research in Science STEM Research Fellowship* 2018
Progress towards the synthesis of spirocyclic heterocyles.
Jordan Mar (undergraduate) and Kevin Huang (PI)
$500

6. *Faculty Research Council Grant* 2017
Heterocycles as privileged scaffolds for combinatorial library design and drug discovery
Kevin Huang (PI)
$6,000

5. *Faculty Research Council Grant* 2016
Design and Synthesis of Cyclic Dipeptides for Biomimetic Epoxidation
Kevin Huang (PI)
$6,000

4. *Faculty Research Council Grant* 2015
DNA-Templated Synthesis in the Construction of Non-Peptidyl Macrocycles
Kevin Huang (PI)
$5,000

3. *Faculty Research Council Grant* 2013
DNA hydrogen bonding detection using variable temperature NMR spectroscopy
Kevin Huang (PI)
$4,500

2. *Faculty Research Council Grant* 2007
Be fruitful and polymerize…Investigating the ribosome catalyzed protein synthesis
Kevin Huang (PI)
$2,500

1. *Creative Teaching Grant* 2007
Using molecular modeling to enhance undergraduate organic chemistry curriculum
Kevin Huang (PI)
$900

HONORS AND AWARDS

12. Undergraduate Scholarly Achievement Award, Office of the Provost 2020-2021
University award recipient for promoting undergraduate research and scholarship
Azusa Pacific University, June 2021.

11. Student Athlete Faculty Recognition Award 2015-2016
Recipient for promoting and supporting student-athletes.
Azusa Pacific University, June 2016.

10. American Chemical Society Certificate of Appreciation 2008
Recognition for commitment and outstanding service to the American Chemical Society (ACS) Project SEED program. August 2008

9. San Gabriel Valley Tribune 2008
Article titled “Action hero of the molecular kind” featuring undergraduate research

experience in organic chemistry at Azusa Pacific University.
Local News page A3. July 4th, 2008.

8. APU Media Relations 2008
Webpage titled "Azusa High School student joins university science research team."

7. Camille and Henry Dreyfus Invitation 2008
Invitation to submit a full proposal titled "Project Pipeline: Early Undergraduate Research Experience as a Platform for Scholarship and Mentorship for Minority High School Students." June 17th, 2008.

6. APU Life Featured Article 2008
Article titled "Research Revisited: Scholarship Made Personal." Volume 21 Spring 2008.

5. American Chemical Society Western Regional Meeting, San Diego 2007
Azusa High School Hector Correa was awarded one of the five recipients of the undergraduate and graduate student poster presentation awards for his research dissemination in organic chemistry at Azusa Pacific University. October 2007.

4. APU Media relations 2007
"Local High School Student Expands Learning Through University Research." August 29th, 2007.

3. Teaching Award in Chemistry 1998
Outstanding graduate teaching
Sponsored by DOW Chemicals and UC Davis. June, 1998.

2. Chemistry Honors Program 1996
Department of Chemistry, UC Irvine. June, 1996.

1. Excellence in Biological Sciences 1994
Department of Biological Sciences, UC Irvine. 1994

RESEARCH PRESENTATIONS (Out of 35 presentations)

35. "Designing an efficient methodology and examining the cell viability of potential anticancer small molecules containing spirocyclic motifs." Tiffany M. Nakla and Kevin S. Huang. Department of Biology and Chemistry, 901 East Alosta Avenue, Azusa, CA 91740. College of Liberal Arts and Sciences 2021 STEM Research Symposium, Azusa Pacific University, 675 E. Foothill Blvd, Azusa, CA 91702. April 17, 2021 (*awarded one of the three outstanding oral presenters).

34. "Comparison of the cytotoxicity of novelly synthesized spirocyclic heterocycles." Christine Messner, Cameryn A. Nakamura, and Kevin S. Huang. Department of Biology and Chemistry, 901 East Alosta Avenue, Azusa, CA 91740. College of Liberal Arts and Sciences 2021 STEM Research Symposium, Azusa Pacific University, 675 E. Foothill Blvd, Azusa, CA 91702. April 17, 2021 (*awarded one of the two outstanding poster presenters).

33. "Emerging applications of spirocyclic molecules as a novel class of therapeutic agents." Hannah T. Lim, Nathaniel J. Kim, and Kevin S. Huang. Department of Biology and Chemistry, 901 East Alosta Avenue, Azusa, CA 91740. College of Liberal Arts and Sciences 2021 STEM Research Symposium, Azusa Pacific University, 675 E. Foothill Blvd, Azusa, CA 91702. April 17, 2021.

32. "Updated synthesis and MTT assay of spirocyclic oximes." Amelia N. Gray* and Kevin S. Huang. Department of Biology and Chemistry, 901 East Alosta Avenue, Azusa, CA 91740. College of Liberal Arts and Sciences 2019 STEM Research Symposium, Azusa Pacific University, 675 E. Foothill Blvd, Azusa, CA 91702. September 28, 2019 (*awarded one of the three outstanding oral presenters).

31. "Biological evaluations of novel spirocyclic heterocycles." Selom K. Mawugbe, Breeana M. Ramirez, Yun-Lan Wong, and Kevin S. Huang. Department of Biology and Chemistry, 901 East Alosta Avenue, Azusa, CA 91740. College of Liberal Arts and Sciences 2019 STEM Research Symposium, Azusa Pacific University, 675 E. Foothill Blvd, Azusa, CA 91702. September 28, 2019 (poster presentation).

30. "Functionalized spirocyclic heterocycle synthesis and biological evaluations." Amelia N. Gray, Jordan Mar, Selom K. Mawugbe, Breeana M. Ramirez, Yun-Lan Wong and Kevin Huang. Department of Biology and Chemistry, 901 East Alosta Avenue, Azusa, CA 91740. The Fall 2019 American Chemical National Meeting & Exposition, San Diego, CA. August 25-29, 2019 (poster presentation).

29. "Regenerative Michael linker in the synthesis of functionalized spriocyclic oximes." Aaron J. Ramsay, Selom K. Mawugbe, and Kevin S. Huang. Department of Biology and Chemistry, 901 East Alosta Avenue, Azusa, CA 91740. Common Day of Learning, Azusa Pacific University, 675 E. Foothill Blvd, Azusa, CA 91702. February 21, 2019 (poster presentation).

28."Analysis of Transition Metal Catalyzed Isomerization of Terminal Alkenes." Alissa C. Matus and Kevin S. Huang. Department of Biology and Chemistry, 901 East Alosta Avenue, Azusa, CA 91740. Azusa Pacific University, Southern California Conference for Undergraduate Research (SCCUR), Pomona, CA. November 18, 2017 (poster presentation).

27. "Tricyclic heterocycles as precursors to functionalized spirocyclic oximes" Silas A. Griffin, Cody R. Drisko, and Kevin S. Huang. Department of Biology and Chemistry, 901 East Alosta Avenue, Azusa, CA 91740. Azusa Pacific University, 11th Annual Fall Research Day, September 16, 2017 (outstanding oral presentation award).

COURSES TAUGHT

- HON340 Nature
- CHEM251 Organic Chemistry I
- CHEM252 Organic Chemistry II
- CHEM261 Organic Lab I
- CHEM262 Organic Lab II
- CHEM451 Advanced Organic Chemistry & Modern Laboratory Techniques
- CHEM112 Biochemistry for Nursing Majors

UNDERGRADUATE RESEARCH MENTORING

1. Russel Anwar (biology, 2006-2008)
2. Joy Yilpet (biology, 2006-2008)
3. Joel Roberts (biochemistry, 2006-2008), currently MD program Univeristy of Colorado
4. Nick Okerson (chemistry, 2006-2007), Chemists, GenMark Diagnostics
5. Christopher Saucedo (chemistry, 2007-2009; ACS Scholar), science teacher at Arcadia High School
6. Mary Hernandez (biology, 2007-2009), currently pharmacy school, University of Ca. San Diego
7. Hector Correa (Azusa High School, 2007-2009), American Chemical Society Project SEED), Bill Gates Foundation Scholar, Yale University.
8. Erica Ascencio (Azusa High School, 2008-2009), American Chemical Society Project SEED)
9. James Barger (biochemistry, 2008-2009), currently General Surgeon, PeaceHealth, longview, WA

10. Andrew Shore (allied health, 2009-2010)
11. Rebecca Skilbred (biochemistry, 2009-2010), currently MD program
12. Clifford Gee (chemistry, 2010-2012, Stauffer Fellow) postdoc at St. Jude Children's Research Hospital
13. Grant Zomermaand (biology, 2010-2011), currently MD program, University of Iowa
14. Kari Honda (allied health, 2010-2011)
15. Jordan West (biology, 2011-2012), currently DPT program, University of Colorado Denver
16. Emily White (chemistry, 2011-2012)
17. Jamie McDowell (biology, 2011-2012)
18. Abbi Mleziva (biochemistry, 2011-2012)
19. Ian Giacopuzzi (biochemistry, 2011-2012)
20. Cody McDermott (biology, 2011-2012)
21. Amanda Bueno (biology, 2011-2012)
22. Scot Lapp (biology, 2011-2012)
23. Kelsey Rodin (allied health2012-2013)
24. Stephanie Thomas (chemistry, 2012-2013)
25. Joshua Delgado (allied health, 2013-2014)
26. Tyler Glendrange (chemistry, 2013-2014), currently MD program Eastern Virginia Medical School
27. Joel Sowders (biology, 2013-2014)
28. Isaac Fields (chemistry, 2013-2014, outstanding chemistry senior)
29. Chandler Paul (allied health, 2013-2014), currently Masters in Biotechnology, Azusa Pacific
30. Cyndi Reck (allied health, 2014-2015)
31. Kaiah Luecke (biochemistry, 2014-2015), PhD program, University of Colorado School of Medicine
32. Emily Burchinal (allied health, 2014-2015), currently physician assistant, Western University
33. Jeremy Hitchcock (biochemistry, 2014-2015), currently Masters in Biotechnology, Azusa Pacific
34. Silas Griffin (biochemistry, 2015-2018), currently MD program Loma Linda Medical School, US Air Force Health Professions Scholarship Program.
35. Cody Drisko (chemistry, 2016-2018, Stauffer Fellow), currently Chemistry PhD program Notre Dame
36. Caitlin Maslyar (allied health, 2016-2017)
37. Jeff Tereski (biochemistry), currently Serology PCR Technician, Antech Diagnostics
38. Erica Steuer (allied health, 2017-2018), currently occupational therapy at USC
39. Jenelle Dhing (history & political science, 2017-2018)
40. Alisa Mattus (chemistry, 2017-2018), chemistry PhD UC Irvine, NSF Graduate Research Fellow
41. Aaron Ramsay (chemistry, 2017-2019; ACS Scholar recipient, Stauffer Fellow)
42. Jordan Mar (biology, 2018-2020, SURE Undergraduate Grant)
43. Amelia Gray (biochemistry, 2018-2021, SURE Undergraduate Grant)
44. Selom Mawugbe (biochemistry, 2019-2021)
45. Breeana Ramirez (biology, 2019-2020)
46. Cameryn Nakamura (allied health, 2020-2021), UCSF pharmacy
47. Christine Messner (biology, 2020-2021)
48. Nathaniel Kim (biochemistry, 2020-2021)
49. Hannah Lim (biochemistry, 2020-2021)
50. Tiffany Nakia (biology, 2020-present, Richter Scholars Undergraduate Grant recipient)
51. Ye Seong Koo (biology, 2021-present)
52. Erika Litson (chemistry, 2021-present)
53. Samuel Yu (biology, 2021-present)