

I. Curriculum Vitae

Kevin D. Walker

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Education

- 1997 – 2000 Post-Doctoral, Washington State University, Pullman, WA.
1990 – 1997 Ph.D. Bioorganic Chemistry, University of Washington, Seattle, WA.
1988 – 1990 Research Chemist, Seafood Products Research Center (SPRC), U.S. Food and Drug Administration, Bothell, WA and National Marine Fisheries Service, Seattle, WA. Developed procedures to assay toxins, including metabolites of crude petroleum from the Prince William Sound oil spill (Alaska), in marine organisms.
1983 – 1988 B.S. Chemistry, University of Washington, Seattle, WA.

Professional Experience

- 2010 – present Associate Professor, Department of Chemistry, Michigan State University, East Lansing, MI.
2004 – 2010 Assistant Professor, Department of Chemistry, Michigan State University, East Lansing, MI.
2000 – 2003 Assistant Scientist/ Laboratory Manager, Washington State University, Pullman, WA.
1997 – 2000 NIH Postdoctoral Research Assistant, Washington State University, Pullman, WA.
1987 – 1988 Undergraduate Research Physical Chemistry, University of Washington, Seattle, WA. Collaborator with NASA to develop application of pressure sensitive porphyrins

Professional Development

- 2021 – 2022 Sabbatical University of Illinois Urbana/Champaign (2021 – 2022) with Huimin Zhao (Chemical and Biomolecular Engineering).

- 2017 Organizer/Chair/Fundraiser of Midwest Enzyme Chemistry Conference (2017), Loyola University, Chicago, IL.
- 2015 Organizer/Chair of session for the Ron Breslow Award: Biomimetic Chemistry (Eric Kool Awardee) ACS National Meeting, Denver, CO.
- 2014 Co-Chair at the 2014 ASBMB National Conference, San Diego, CA.
- 2007 Invited as Discussion Leader at Gordon Research Conference, Enzyme, Coenzymes and Metabolic Pathways, University of New England, Biddeford, ME.
- 2004 Invited as Discussion Leader at the Terpenoids section at the Frontiers of Bioorganic and Natural Product Chemistry Symposium, University of Washington, Seattle, WA.
- 2000 Drug Discovery 2000 Seminar, La Jolla, CA.
- 1998 Fred Pryor Seminars: Management Problems of the Technical Person in a Leadership Role, Spokane, WA.
- 1997 Drug Discovery and Development Seminar, Baltimore, MD.
- 1989 Featured in the FDA's monthly journal, FDA Consumer, Fishing for Facts in Fish Safety.23 (1). Abstract: As more Americans are making fish a healthful part of their diets, the safety of seafood is being questioned. The controversy has led FDA to take a closer look at its seafood program.

Grants, Fellowships and Awards

MTRAC (Michigan Translational Research & Commercialization) AgBio Innovation Challenge Award, 2021, Michigan State University, East Lansing, MI

Conagen, May 2019 – April 2020, Michigan State University, East Lansing, MI

MSU Diversity Research Network, November 2018 – October 2019, Enantioselective Chemistry of MIO-Based Transaminases to Make Serines and Iso-serines, Michigan State University, East Lansing, MI

USAID/ USP Grant, Dec 2014 – Dec 2015, RC104517, Characterization of Related Impurities in Antibiotics, Michigan State University, East Lansing, MI.

Office of Inclusion and Intercultural Initiatives Award, 2015, Michigan State University.

Graduate Academic Advisor Award 2010-2011, Michigan State University.

NSF/ MCB/BIO -CAREER Award, Aug 2008 - 2013, NSF0746432, Molecular And Biochemical Evaluation of a Phenylalanine Aminomutase, Michigan State University, East Lansing, MI.

NSF/ MCB/BIO - RIG Award, Aug 2007- 2009, NSF639937, Dissecting the Biosynthetic Pathway Organization of Bioactive neo-Clerodanes in Plants, Michigan State University, East Lansing, MI.

MAES Non-Recurring Funds, Equipment Grant

WSU Inventor Recognition Event, March 23, 2007, WSU Research Foundation recognition of inventors from July 1, 2005 through December 31, 2006.

NSF/DBI-MRI, Jan 2006, NSF 619489, Acquisition of Metabolite Profiling Mass Spectrometry Instrumentation for Michigan State University

Neish Young Investigator Award, 2006, Phytochemical Society of North America.

Carl Storm Underrepresented Minority Fellowship to support participation in the Plant Metabolic Engineering GRC, Tilton, NH, 2005.

National Institutes of Health Postdoctoral Fellowship, 1997-2001; CA55254, Washington State University, Pullman, WA.

National Institutes of Health Graduate Student Fellowship, 1991-1997; GM32333 supplement, University of Washington, Seattle, WA.

National Science Foundation Graduate Student Fellowship, 1991-1994; Special Projects Award 9119783, University of Washington, Seattle, WA.

National Aeronautics and Space Administration Four Year Graduate Fellowship, 1988; Physical Chemistry Dept., University of Washington, Seattle, WA.

Undergraduate Merit Scholarship, 1986-1987; University of Washington, Seattle, WA.

Undergraduate Merit Scholarship, 1983-1985; Seattle University, Seattle, WA.

Dean's List, 1984-1985; Seattle University, Seattle, WA.

Memberships and Service

Committees

AdHoc Faculty Search Committee, Biochemistry and Molecular Biology, MSU (2023)

MSU Diversity Equity and Inclusion Committee (2019)

ACS Division of Organic Chemistry Executive Committee (2017 – 2019)

Faculty Advisory Council (2016 – present)

Advisory Committee (CEM, 2005 – 2008, 2012 – 2013, 2015 – 2016)

MSU Chemistry Chair Review Committee (2015–2016)

MSU University Library Committee (2014, 2015)

AMU-MSU Summer Research/Graduate Admissions Pathway Committee (2012, 2013, 2014)

Theme Organizing Committee for ASBMB 2014 Conference (2012 – 2013)

Plant Biotechnology T32 Executive Committee Member (2012 – present)

Ad-Hoc Faculty Grievance (2012)

MSUT Director Search Committee (2011 – 2012)

CNS Curriculum Committee (2010 – 2011)

Graduate Programs and Curriculum (BMB, 2009 – present)

Student Judiciary (BMB, 2009 – present)

MSUT Campus Advisory Committee (2010 – present)

CNS Academic Grievance Hearing Committee (2008)

Colloquium Committee (CEM, 2007 – 2008)

Inorganic Search Committee (CEM, 2006 – 2007)

Chair Search Committee (CEM, 2005 – 2006)

CNS Life Sciences Task Force (2006 – 2007)

Plant Sciences (PSE III) Committee (2006 – 2007)

Service

2022 Recruiting: Annual Biomedical Research Conference for Minority Students
Anaheim, CA.

2019 – pres Journal of Biological Chemistry Editorial Board

2019 Recruiting: Annual Biomedical Research Conference for Minority Students
Anaheim, CA.

2018 Recruiting: Annual Biomedical Research Conference for Minority Students
Indianapolis, IN.

2017 Recruiting: Annual Biomedical Research Conference for Minority Students
Phoenix, AZ

2017 – pres Turning Point of Lansing: Transforming Boys to Men -- providing an
Afrocentric group-mentoring experience that gives young African American
males an opportunity to explore life's challenges.

2016 Recruiting: Annual Biomedical Research Conference for Minority Students
Tampa, FL.

2012 – pres. Review Editorial Board of Frontiers in Plant Metabolism and
Chemodiversity, a specialty of Frontiers in Plant Science.

Peer-Reviewer: Journal Manuscripts

Frontiers in Science Workshop for Secondary-teachers of science, May 4 & 5, 2007

1995 – 1996 Graduate School Minority Student Education Division Mentor; University of
Washington, Seattle, WA.

1987 – 1988 Certified Phlebotomist, Harborview Medical Center, Seattle, WA.

1987 Volunteer Escort, University of Washington Medical Center, Seattle, WA.

Membership

American Chemical Society (ACS) Division of Organic Chemistry (DOC), Member-At-Large
2017-2019.

NIH Center for Scientific Review Panel Member Dec. 2011

USDA Review Panel Member Aug. 2009

NSF Review Panel Member 2005, 2007, 2016 MCB/BIO (and REU).

American Chemical Society Member (Division of Organic Chemistry; Division of Biological Chemistry), 1991 – present.

American Society of Plant Biologists, 2001 – present.

NOBCChE Member, 1996 – 1997 (Seattle WA), 2004 (National Meeting, San Diego CA).

Teaching

1. Formal Courses Taught (evaluations are available upon request).

Semester / Year	Course	Avg. # of Students	Course description
Fall / 2004	CEM 251	400	First Semester Organic Chemistry (undergraduate)
	CEM 850 (shared)	25	Intermediate/Advanced Organic Synthesis (graduate)
Fall / 2005	CEM 251	320	First Semester Organic Chemistry (undergraduate)
	CEM 850 (shared)	25	Intermediate/Advanced Organic Synthesis (graduate)
Spring / 2006	BMB 804 (shared)	25	Biochemical Mechanisms and Structure
Fall / 2006	CEM 251	320	First Semester Organic Chemistry (undergraduate)
	CEM 850 (shared)	25	Intermediate/Advanced Organic Synthesis (graduate)
	CEM 958	20	Organic Chemistry Student Seminar Course (graduate)
	BMB 101 (shared)	60	Description of topics in biochemistry research (undergraduate)
Spring / 2007	BMB 804 (shared)	25	Biochemical Mechanisms and Structure
Fall / 2007	CEM 251	320	First Semester Organic Chemistry (undergraduate)
	CEM 850 (shared)	25	Intermediate/Advanced Organic Synthesis (graduate)
	CEM 958	20	Organic Chemistry Student Seminar Course (graduate)
Spring / 2008	BMB 804 (shared)	25	Biochemical Mechanisms and Structure
Fall / 2008	CEM 850 (coordinator)	25	Intermediate/Advanced Organic Synthesis (graduate)
Spring / 2009	CEM 251	390	First Semester Organic Chemistry (undergraduate)
	BMB 804 (shared)	25	Biochemical Mechanisms and Structure
Fall / 2009	CEM 850 (shared)	25	Intermediate/Advanced Organic Synthesis (graduate)
Spring / 2010	CEM 251	420	First Semester Organic Chemistry (undergraduate)
	BMB 804 (shared)	25	Biochemical Mechanisms and Structure
Fall / 2010	CEM 251	320	First Semester Organic Chemistry (undergraduate)
	CEM 850 (shared)	25	Intermediate/Advanced Organic Synthesis (graduate)
	BMB 101 (shared)	60	Description of topics in biochemistry research (undergraduate)
Spring / 2011	CEM 251	350	First Semester Organic Chemistry (undergraduate)
	BMB 804 (shared)	25	Biochemical Mechanisms and Structure

Spring / 2012	CEM 956 BMB 804 (shared)	6 20 – 25	Fundamentals of Scientific Writing Biochemical Mechanisms and Structure
Fall / 2012	CEM 251 BMB 101	360 60	First Semester Organic Chemistry (undergraduate) Description of topics in biochemistry research (undergraduate)
Spring / 2013	BMB 805 (shared)	20 – 25	Biochemical Mechanisms and Structure
Fall / 2013	CEM 251	300	First Semester Organic Chemistry (undergraduate)
Spring / 2014	BMB 805 (shared)	20 – 25	Biochemical Mechanisms and Structure (Increased participation due to colleague taking on other duties)
Fall / 2014	CEM 251 CEM 958 BMB 101 (shared) CEM 420	320 20 60 1	First Semester Organic Chemistry (undergraduate) Organic Chemistry Student Seminar Course (graduate) Description of topics in biochemistry research (undergraduate) Undergraduate Research
Fall / 2015	CEM 850 (shared) CEM185H	15 35	Organizer of Intermediate/Advanced Organic Synthesis (graduate) Introduction of Research Opportunities to Undergraduates
Spring / 2016	CEM 251 CEM 420	360 2	First Semester Organic Chemistry (undergraduate) Undergraduate Research
Fall / 2016	CEM 251 CEM 420 CEM185H	360 2 35	First Semester Organic Chemistry (undergraduate) Undergraduate Research Introduction of Research Opportunities to Undergraduates
Fall / 2017	CEM 351 CEM 420 CEM 850 (shared) CEM185H	260 2 20 20	First Semester Organic Chemistry (undergraduate majors) Undergraduate Research Intermediate/Advanced Organic Synthesis (graduate) Introduction of Research Opportunities to Undergraduates
Spring / 2018	CEM 251 CEM 400H	360 3	First Semester Organic Chemistry (undergraduate) Undergraduate Research
Summer / 2018	CEM 355	40	Organic Chemistry for Majors (undergraduate)
Fall / 2018	CEM 420 CEM 400H	30	Professional Development Course for Chemistry Majors Undergraduate Research
Spring / 2019	CEM 251	350	First Semester Organic Chemistry (undergraduate)
Spring / 2020	CEM 251	320	First Semester Organic Chemistry (undergraduate)
Fall / 2022	CEM 251 CEM 850 (shared)	360 30	First Semester Organic Chemistry (undergraduate) Intermediate/Advanced Organic Synthesis (graduate)
Spring / 2023	CEM 251	360	First Semester Organic Chemistry (undergraduate)
Fall / 2023	CEM 351	250	First Semester Organic Chemistry (undergraduate majors)

2. Undergraduate research. Michigan State University, undergraduate unless stated otherwise

(listed in chronological order):

06/2004-09/2004: 1) Tammy Tran (Pre Med).

01/2005-09/2005: 2) Ted Amundsen (in Medical School), 3) Kim Jerkins (Pre Med), 4) Michelle Solomon (Pre Med)

01/2005-09/2006: 5) Erin Merriweather (Dental School), 6) Becky Simon (res. tech. at Wayne State Univ.), 7) Dave Ringham (Chem. Eng.), 8) Terri Brinks (Pre Med), 9) Chris Johnson (Medical School), 10) Dominique Hopkins (Pre Med), 11) Allyson Boers (Biochem), 12) Thomas Edwards (Graduate Chem, at Purdue University), 13) Jesse Zuehlke (Pre Med), 14) Selena Ransom (Pre Med)

01/2005-06/2007: 15) Amanda Ward (Apiscent Labs), 16) Colin Seguin (Munson Medical Center), 17) Chris Prather (Bioc. Professorial Assistant through Lyman Briggs)
01/2008-07/2009: 18) Joshua Bilsborrow (MD at Yale School of Medicine)
01/2010-07/2010: 19) Aws Hammad (MD: Orthopaedic Surgery, Detroit Medical Center),
01/2010-01/2011 20) Robert J. Kubiak
01/2010-01/2012: 21) Yvonne Deporre (Ph.D., Housey Pharmaceuticals, Southfield, MI)
01/2012-06/2014: 22) Aaron Barto (Dental Student, Northwest Michigan Health Services)
01/2013-06/2013: 23) Doug Peters
08/2014-07/2015: 24) Olivia Goethe (Graduate School Chemistry, Yale University)
08/2015-04/2017: 25) Devinda Wijewardena
Summer 2016: 26) Shahrazad Polk (Texas Southern University, undergraduate), 27) Sydney Thomas (Suffolk University, undergraduate)
01/2016-12/2017: 28) Brendyn Smith*
01/2017-06/2019: 29) Guhya Jang, 30) Thomas Young
01/2018-06/2018: 31) Renee Randolph
Summer 2019: 32) Ciara Gillis (University of North Carolina, undergraduate), 33) Jenny Elder (Green Mountain College, Vermont)
Summer 2021: 34) Laura Hiotaky (Michigan State University, undergraduate)

*Brendyn Smith: MSU Dean's Research Scholar, UURAF Poster Award Winner (Large Scale Biocatalysis of Phenylserine Analogues and Further Chemicals Derivatization Towards Potential LAT-1 Inhibitors)

3. Snapshot of Student Committee Assignments

KEVIN WALKER

12 year counts and current committee membership counts

Program	Type	12 Year Counts						Count of Current Committee Memberships					
		Chair	Doctoral Dissertati on Director	Total	Chair	Masters Dissertati on Director	Total	Chair	Doctoral Dissertati on Director	Total	Chair	Masters Dissertati on Director	Total
Biochemistry & Molecular Biology	Core	2	1	13				1		4			
Cell and Molecular Biology	Core	1		2									
Chemical Engineering	Assc			1									
Chemistry	Core	14	2	67	2		7	3	2	24			
Entomology							1						
Genetics	Core												
Plant Biology				2						1			
Plant Breeding & Genetics				1						1			
Quantitative Biology		1		2									
Total:		18		88	2		8	4		30			

This list is representative and not exhaustive

<p>4. Current Ph.D. and M.S. advisees.</p> <p>Past Advisees</p> <ol style="list-style-type: none"> 1. Aimen Ahilfi (O-Chem) Ph.D. candidate 2. Gayanthi Attnayake (O-Chem) Ph.D. June 2021 3. Tyler Walter (O-Chem) Ph.D. June 2020 4. Prakash Shee (O-Chem) Ph.D. July 2020 5. Chelsea Thornburg (BMB) Ph.D. Dec 2015 6. Ruth Muchiri (O-Chem) Ph.D. June 2015 7. Dilini Ratnayal (O-Chem) Ph.D. Jan 2015 8. Udayanga Wanninayake(O-Chem) Ph.D. 2013 9. Irosha Nawarathne (O-Chem) Ph.D., Dec 2011 10. Danielle Nevarez (Cell & Mol Biol) Ph.D., Dec 2011 11. Getrude Dibo (O-Chem) M.S., Dec 2010 12. Mark Ondari, (O-Chem) Ph.D., Dec 2010 13. Sullivan, Sean (BS/MS-Chem)-BS/MS, May 2010 14. Dennis Quist (O-Chem) M.S., May 2010 15. Washington Mutatu, (Inorg. Chem.) Ph.D., March 2010 16. Yemane Mengistu (O-Chem) M.S., Jan 2010 17. Sanjit Sanyal, (O-Chem) M.S, June 2007 <p>5. Current Ph.D. and M.S. guidance committee students.</p> <ol style="list-style-type: none"> 18. Ramchiary, Kritika (Org. Chem.) 19. Hannah Parks (Plant Research Lab) 20. Chau, Noel (Org. Chem.) 21. Xiaoxiao Liu (Org. Chem.) 22. Peng Wang (Org. Chem.) 23. Xiaoran Zhang (Anal. Chem.) 24. Hou, Zhilin (Org. Chem.) 25. Feng Shi (Org. Chem.) 26. Jiangyin Bao (Anal. Chem.) 27. Jiang, Yuhan (Org. Chem.) 28. Lin, Po-Han (Org. Chem.) 29. Yang, Chia-Wei (Org. Chem.) 30. Azuka, Chidiogo (Org. Chem.) 31. King, Austin (Org. Chem.) 32. Shafiei Chaharberoud, Fatemeh (Org. Chem.) 33. Augustine, Rosemary (Inorg. Chem.) 34. George, Dare (Org. Chem.) 35. King, Austin (Org. Chem.) 	<p>Past guidance committee students who defended their Thesis</p> <ol style="list-style-type: none"> 1. Chhabra, Arzoo (Org. Chem.) 2. Houchlei, Samantha (Org. Chem.) 3. Sun, Mengxia (Org. Chem.) 4. Rashidi jahanabad, Zahra (Org. Chem.) 5. Robert Wolfe (Org. Chem.) 6. Katie Kwiatkowski (Org. Chem.) 7. Hunter McFall-Boegeman (Org. Chem.) 8. Seokjoo Lee (Org. Chem.) 9. Remie Fawaz (Biological Chemistry) 10. Indiwari Gopallawa (Bioch. & Mol. Biol.) 11. Nossoni, Rafida (Zahra) (Org. Chem.) 12. Liu, Nan (Bioch. & Mol. Biol.) 13. Sungsuwan, Suttipun (Org. Chem.) 14. Aparajita Banerjee (Bioch. & Mol. Biol.) 15. Watson, Camille (Org. Chem.) 16. DuLaney, Steven (Org. Chem.) 17. Berbasova, Tetyana (Org. Chem.) 18. Halpin, Stephen (Anal. Chem.) 19. Vogel, Paul (Anal. Chem.) 20. Hu, Heyi (Org. Chem.) 21. Ziru Li (Bioch. & Mol. Biol.) 22. Juliana Sacoman (Biochemistry & Molecular Biology) 23. Bentley, Phillip (Org. Chem.) 24. Wang, Wenjing (Org. Chem.) 25. Nguyen, Thu (Org. Chem.) 26. Bodnar, Melissa (Anal. Chem.) 27. Wortas, Susan (Org. Chem.) 28. Suntae Kim (BMB) Jagannath Silwal (Bioch. & Mol. Biol.) 29. Fanny Chu (Forensics) 30. Jia Gao (Org. Chem.) 31. Fangyi Shen (Chemistry) 32. Evert Njomen (Org. Chem.) 33. Molengraft, Andrea (Org. Chem.) 34. Liu, Ping (Org. Chem.) 35. Daniel Lybrand (Bioch. & Mol. Biol.) 36. Bryan Leong (Plant Research Lab) 37. Rahim, Ronald (Org. Chem.) 38. Xiaofei Jia (Org. Chem.) 39. Badru Barry-Deen (Org. Chem.) 40. Bhattacharjee, Somnath (Org. Chem.) 41. Molina, Maria Isabel (Plant Research Lab) 42. Job, Nileena Alexy (Anal. Chem.) 43. Olumulade, Toyin (Org. Chem.) 44. Ki Duk Kim (Entomology) 45. Jaime Curtis (Phys. Chem.) 46. Matthew Nethercutt (Phys. Chem.) 47. JiaXing Chen (BMB) Ph.D. candidate 48. Calvin Grant (Org. Chem.) 49. Kristen Entwistle (Bioch. & Mol. Biol.) 50. Justin R. Klesmith (Bioch. & Mol. Biol.) 51. Mike Sgambelluri (Plant Biology) 52. Fatmata Jalloh (Org. Chem.) 53. Aaron Baker (Org. Chem.)
<p>6. Post-Doctoral Trainees</p> <ol style="list-style-type: none"> 1. Catherine Loncaric-Gatzmeyer (Bristol Meyers Squibb) 2. Brad Cox 	

7. Special undergraduate advising.

Charles Drew and McNair Minority Student Advisor

Ashley Wallace

4-Plus Bridge to the Doctorate Program (Michigan State University Department of Chemistry)

Zayna King (Medgar Evers College) funded through the Office for Inclusion and Intercultural Initiatives

MSU Summer Research Opportunity Program

Shahrazad Polk

Sydney Thomas

8. Special graduate advising.

BHEARD Program (College of Agriculture and Natural Resources [CANR])

Joseph Bigirimana (CANR, 2018)

Jean Bosco Shingiro (CANR, 2019)

9. Special High School advising.

Project SEED

Bhakti R. Pokhrel (Everett High School, 2014)

Asha Abdulahi (East Lansing High School, 2013)

10. REU Mentoring.

Yvonne DePorre (2012)

Jenna Reeger (2012)

Ebony Love (2012)

Chelsea Theisen (2013)

Jonathon Hall (2014)

Oliva Goethe (2014)

Lawrence Allen (2015)

Brendyn Smith (2016)

Jeshua Avila (2017)

Gyuha Jang (2017)

Ariana Saifollahi (2019)

Laura Hiotaky (2021)

Presentations

Invited

1. Walker, K. **2024**, Repurposing Enzymes for Biocatalysis of Natural Product Analogs, Youngstown State University Chemistry Department (postponed to Fall 2024)
2. Walker, K. **2022**, Repurposing Enzymes for Biocatalysis of Natural Product Analogs, Grinnell College, University of Illinois Urbana/Champaign, IL, 13 January 2022.
3. Walker, K. **2019**, Repurposing Enzymes for Biocatalysis of Natural Product Analogs, Grinnell College, Grinnell, IA, 17 October 2019.
4. Walker, K. **2019**, 2019 Annual Center for Biocatalysis and Bioengineering Symposium, Repurposing Enzymes for Biocatalysis of Natural Product Analogs, Center for Biocatalysis and Bioprocessing, The University of Iowa, Coralville, IA, 20-23 October 2019.

5. Walker, K. **2019**, Repurposing Enzymes for Biocatalysis of Natural Product Analogs, University of Michigan, Ann Arbor, MI, 7 October 2019.
6. Walker, K. **2017**, BioTrans2017, Repurposing Enzymes for Biocatalysis of Natural Product Analogues Eötvös Lóránd University, Budapest, Hungary, 9-13 July 2017.
7. Walker, K. **2016**, Repurposing Enzymes for Biocatalysis of Natural Product Analogues Gordon Research Conference, Waterville Valley, NH, July 29, 2016.
8. Walker, K. **2016**, Repurposing Enzymes for Biocatalysis of Natural Product Analogues, North Central College, Naperville IL, March 7, 2016.
9. Walker, K. **2015**, Repurposing Enzymes for Biocatalysis of Natural Product Analogues, Kalamazoo College, Kalamazoo MI, October 23, 2015.
10. Walker, K. **2015**, Repurposing Enzymes for Biocatalysis of Natural Product Analogues, University of Iowa, Iowa City IA, October 9, 2015.
11. Walker, K. **2014** Application of Plant and Bacterial Enzymes in the Biocatalysis of Paclitaxel, ASBMB Annual Meeting. San Diego CA, April 26-30, 2014
12. Walker, K. **April 2014**, Application of Plant and Bacterial Enzymes in the Biocatalysis of Paclitaxel, ASBMB National Meeting, San Diego, CA.
13. Walker, K. **2014** Mechanism and Repurposing of MIO-Dependent Aminomutases, ASBMB Annual Meeting, San Diego CA, April 26-30, 2014.
14. Walker, K. **2013** Lecture: Anabolism and Catabolism of Acetylcholine in Neural Signaling. Oakland Medical School, Oakland, MI.
15. Walker, K. **2013** Moving Towards Sustainable Biocatalysis of Taxol Analogs, 2nd Annual Plant Biotechnology for Health and Sustainability, East Lansing, MI, MSU October 25, 2013.
16. Walker, K. June **2013**, Application of Plant and Bacterial Enzymes in the Biocatalysis of Paclitaxel, Academia Sinica, Nankang, Taipei, Taiwan.
17. Walker, K. March **2013**, Historical Perspective on Taxol Biosynthesis: Then and Now, University of Michigan, Ann Arbor, MI.
18. Walker, K. February **2013**, Historical Perspective on Taxol Biosynthesis: Then and Now, Weizmann Institute, Rehovot, Israel.
19. Walker, K. June **2012**, Dissecting the Mechanisms of Isozymic Aminomutases, Bioorganic Gordon Research Conference, Proctor Academy, Andover, NH.

20. Walker, K. August **2012**, Application of an NRP Synthetase in Paclitaxel Biosynthesis. PSNA Meeting, London. Ontario.
21. Walker, K. June **2010**, Green Approaches in Taxol Cancer Research, AOAC Pacific Northwest Section meeting
22. Walker, K. April **2010**, Freshman Green Chemistry Seminar, Michigan State University.
23. Walker, K. March **2010**, Washington State University.
24. Walker, K. September **2009**, Freshman Green Chemistry Seminar, Michigan State University.
25. Walker, K. March **2009**, Substrate Specificity and Reaction Stereochemistry of a *Taxus*-derived Catalysts, Zing Natural Products Conference, Antigua.
26. Walker, K. June **2008**, Substrate Specificity and Reaction Stereochemistry of a *Taxus*-Phenylalanine Aminomutase, UC San Diego, San Diego, CA.
27. Walker, K. May **2008**, Taxol Biosynthesis, Tianjin University, School of Chemical Engineering & Technology, PR China.
28. Walker, K. March **2008**, Institute of Biological Chemistry, Washington State University, Pullman, Washington.
29. Walker, K. **2007** In vivo Biocatalytic Approach to Second-generation Taxol Analogs, Department of Chemistry, Oakland University Oakland, Michigan.
30. Walker, K. **2007** Biocatalytic Approach to Second-generation Taxol Analogs, Chemistry and Chemical Biology Seminars and Lecture series, Cornell University, New York.
31. Walker, K. **2006** Evaluating the Biogenesis and Molecular Pathways of Bioactive Plant Products, ASPB Symposium on Medicinal Plants and Ethnobotany, Boston, Massachusetts.
32. Walker, K. **2006** Evaluating the biogenesis and molecular pathways of bioactive plant products. Phytochemical Society of North America annual meeting, Oxford, Mississippi.
33. Walker, K. **2006** Biocatalytic Approach to Second-generation Taxol Analogs using BAHD enzymes and PAM, Plant Biology seminar series, University of Amherst, Massachusetts.
34. Walker, K. **2005** Isolation, characterization, and flux analysis of genes on plant secondary product biosynthetic pathways, Gordon Conference, Tilton, Massachusetts.

Prior to Independent Career

35. Walker, K. **2003** Taxol: Acquisition, functional expression, and characterization of the acyl/aroyl transferases in Taxol biosynthesis, TERPNET, Lexington, Kentucky.
36. Walker, K. **2002** Taxol Biosynthesis: Stepping along the Pathway, Mérida, México.
37. Walker, K. and Chau, M. **2001** ARCS Foundation Inc. (Achievement Rewards for College Scientists). Presented to ARCS financial donors the strengths of the WSU Plant Physiology degree programs, quality of the faculty, number of published scientific articles and faculty belonging to the National Academy of Sciences, Washington State University, Pullman, WA.
38. Plant Biochemistry Research Training Course Lecture **2001** Washington State University, Pullman, WA.
39. Walker, K. **1999** Recent Advances in Taxol biosynthesis, Volcano Conference, Mt. Rainier, WA.
40. Guest Lecturer in Genetics/Cell Biology 450 (Introduction to Cell Biology) **1999** and **2000** Medicinal Natural Products Isolated from Plants, Washington State University, Pullman, WA.
41. Walker, K., **1998** Enzymatic Acylations in Taxol and Hyoscyamine Biosynthesis, Plant Physiology Department Spring Seminar, Washington State University, Pullman, WA.
42. Walker, K.D., Floss, H.G. **1994** Genetic Transformation of Mature *Taxus*; An Approach to Genetically Control the *in vitro* Production of the Anticancer Drug, Taxol. NOBCCHE Pacific Northwest Regional Meeting, Seattle, WA.
43. Walker, K., Hungerford, J., and Wekell, M. **1990** Investigations on the Ability of *Cancer magister* to Metabolize Crude Oil Constituents (Polyaromatic Hydrocarbons). Association of Analytical Chemist (AOAC) Pacific Northwest Regional Meeting, Olympia, WA.
44. Walker, K., Hungerford, J., and Wekell, M. **1989** Determination of TBT (tri-n-butyltin) in Oysters as TBT-hydride by Reaction-GC. Association of Analytical Chemist (AOAC) Pacific Northwest Regional Meeting, Olympia, WA.

Contributed

1. Walker, K. June **2008 Poster**, Substrate Specificity and Reaction Stereochemistry of a *Taxus*-Phenylalanine Aminomutase, UC San Diego, San Diego, CA.
2. Washington Mutatu, Karin L. Klettke, Sanjit Sanyal, Clifton Foster, and Kevin D. Walker **2007 Poster**: An examination of the substrate specificity of a phenylalanine aminomutase (PAM) and evaluation of the stereochemistry of the β -amino acid product, Midwest Enzyme Chemistry Conference, University of Illinois at Chicago, College of Pharmacy, Chicago, IL, USA (September)

- Washington Mutatu, Karin L. Klettke, Sanjit Sanyal, Clifton Foster, and Kevin D. Walker **2007 Poster**: An examination of the substrate specificity of a phenylalanine aminomutase (PAM) and evaluation of the stereochemistry of the β -amino acid product, Gordon Research Conference, Enzymes Coenzymes and Metabolic Pathways, University of New England, Biddeford, ME, USA (July).
- Walker, K. **2004 Poster**: Cloning, heterologous expression and characterization of a phenylalanine aminomutase involved in Taxol biosynthesis, Iowa State University, Ames, IA, USA, and at University of Washington, Seattle, WA, USA.

Talks Contributed by students

- Shee, P. K., Ratnayake, N., Goethe, O., Onyeozili, E. E., and Walker, K. D. (2017) Repurposing an aminomutase from *Taxus* plants: Enzymatic conversion of cinnamate epoxides into ring-opened, chiral phenylserines, Midwest Enzyme Chemistry Conference, **October 14, 2017**. Loyola University Chicago.

Posters Contributed by students

- Shee, P. K., Ratnayake, N., Goethe, O., Onyeozili, E. E., and Walker, K. D. (2017) Repurposing an aminomutase from *Taxus* plants: Enzymatic conversion of cinnamate epoxides into ring-opened, chiral phenylserines (**poster**), pp BIOL-315, **April 2-6, 2017 American Chemical Society**.
- Walter, T., Smith, B., Wijewardena, D., and Walker, K. D. (2016), Large-Scale Biocatalysis of Medicinally Relevant Phenylserine Analogues and (2*R*,3*S*)-Phenylisoserinyl Baccatin III (**poster**), **October 1, 2016, University of Illinois, Chicago, Midwest Enzyme Chemistry Conference**.
- Gayanthi K. Attanayake, Tyler Walter, Kevin D. Walker, Studies of Phenylalanine Substituent Effects on Various *Oryza sativa* Tyrosine Aminomutase (OsTAM) Mutants (**poster**) October 1, 2016, University of Illinois, Chicago, Midwest Enzyme Chemistry Conference
- Shee, P. K., Ratnayake, N., Goethe, O., Onyeozili, E. E., and Walker, K. D (2016) Repurposing an Aminomutase from *Taxus* Plants: Enzymatic Conversion of Cinnamate Epoxides into Ring-opened Arylserines (**poster**), **October 1, 2016, University of Illinois, Chicago, Midwest Enzyme Chemistry Conference**.
- Walter, T., Smith, B., Wijewardena, D., and Walker, K. D. (2016), Large-Scale Biocatalysis of Medicinally Relevant Phenylserine Analogues and (2*R*,3*S*)-Phenylisoserinyl Baccatin III (**poster**), **October 1, 2016, University of Illinois, Chicago, Midwest Enzyme Chemistry Conference**.
- Attanayake, Gayanthi K.; Walter, Tyler; Walker, Kevin D., Studies of Phenylalanine Substituent Effects on Various *Oryza sativa* Tyrosine Aminomutase (OsTAM) Mutants

- (**poster**) October 1, 2016, University of Illinois, Chicago, Midwest Enzyme Chemistry Conference
7. Thomas, S., Attanayake, G., Walter, T., and Walker, K.D. (2016) Studies of Phenylalanine Substituents Effects on the Activity of *Oryza sativa* Tyrosine Aminomutase Mutants (**poster/oral**) Michigan State University Summer Research Opportunity Program (SROP) 2016. **July 22, 2016 oral; July 27, 2016 MID-SURE poster.**
 8. Polk, S., Shee, P., and Walker, K.D. (2016) Determining the Stereochemistry of Biosynthetic Phenylserine (**poster/oral**) Michigan State University Summer Research Opportunity Program (SROP) 2016. **July 22, 2016 oral; July 27, 2016 MID-SURE poster.**
 9. Smith, B., Walter, T., and Walker, K.D. (2016) Large Scale Biocatalysis of Medicinally Relevant Phenylserine Analogues and (2R,3S)-Phenylisoserinyl Baccatin III (**poster/oral**) Michigan State University NSF REU Program: Cross-Disciplinary Training in Sustainable Chemistry and Chemical Processes. **July 28, 2016 oral; July 27, 2016 MID-SURE poster.**
 10. King, Z., Walter, T., and Walker, K.D. (2015) The Stereochemical and Mechanistic Studies of Tyrosine Aminomutase in *Oryza Sativa* (**poster**) 48th Annual Metropolitan Association for College and University Biologists Conference at Montclair State University in New Jersey. Undergraduate Zayna King (Medgar Evers College, Brooklyn NY) won first place out of 30 participants in the Biochemistry section. **November 7th, 2015.**
 11. Walter, T., King, Z., and Walker, K.D. (2015) High Enantioselectivity and Unique Substrate Specificity of a Tyrosine Aminomutase from *Oryza sativa* (**poster**) 35th Midwest Enzyme Chemistry Conference (MECC), Illinois Institute of Technology, Chicago IL, **September 12, 2015.**
 12. Chelsea Thornburg, Dilini Ratnayake, Ruth Muchiri, and Kevin D. Walker (2014) Complete Biosynthesis of Taxol and Its Analogs from Baccatin III in Four Enzymatic Steps (**poster**). "Pinnavaia MSU Materials Chemistry Symposium". Michigan State University, East Lansing, MI. **May 10, 2014.**
 13. Ruth Muchiri and Kevin D. Walker (2013) Tyrocidine Synthetase A Catalyzes the Production of Phenylisoserinyl CoA and Other Amino Phenylpropanoyl Thioesters (**poster**) 246th ACS National meeting in Indianapolis, IN **September 12th, 2013.**
 14. Ruth Muchiri and Kevin D. Walker (2013) Tyrocidine Synthetase A Catalyzes the Production of Phenylisoserinyl CoA and Other Amino Phenylpropanoyl Thioesters (**poster**) 15th annual Wayne State Chemistry Graduate Research Symposium, Wayne State University, MI, **September 28th, 2013.**
 15. Nishanka Dilini Ratnayake and Kevin D. Walker, (2013), Dissecting the enantioselectivity of two phenylalanine aminomutases (**oral**), 246th ACS national meeting, Indianapolis, IN. **September 2013.**

16. Chelsea Thornburg, Dilini Ratnayake, and Ruth Muchiri, (2013) Complete Biosynthesis of Taxol and Its Analogs from Baccatin III in Four Enzymatic Steps. 2013 Plant Biotechnology for Health and Sustainability Symposium (**poster**) Michigan State University, East Lansing, MI. **October 2013**.
17. Ondari, M. E.; Walker, K. D. Abstracts of Papers, 239th ACS National Meeting, San Francisco, CA, United States, **March 21-25, 2010**, ORGN-416.
18. Nevarez, D. M.; Mengistu, Y. A.; Nawarathne, I. N.; Walker, K. D. Abstracts of Papers, 239th ACS National Meeting, San Francisco, CA, United States, **March 21-25, 2010**, BIOL-117.
19. Nawarathne, I. N.; Walker, K. D. Abstracts of Papers, 239th ACS National Meeting, San Francisco, CA, United States, **March 21-25, 2010**, BIOT-454.
20. Nawarathne, I.N. **July 22-30, 2009 Poster** "The Biocatalysis of Paclitaxel (Taxol™) Analogues using Two Benzoyltransferases and Various Synthetically-derived Acyl Coenzyme A Compounds." ACS Summer School on Green Chemistry and Sustainable Energy, Colorado School of Mines, Golden, Colorado, USA.
21. Ondari, M.E. **July 22-30, 2009 Poster** "Biocatalysis of Second-generation Taxol Analogues using Enzyme Promiscuity." ACS Summer School on Green Chemistry and Sustainable Energy, Colorado School of Mines, Golden, Colorado, USA.
22. Mutatu, W. **July 9-17, 2008 Poster** "Biosynthesis of Unnatural β -Amino Acids Using Phenylalanine aminomutase." ACS Summer School on Green Chemistry and Sustainable Energy, Colorado School of Mines, Golden, CO, USA.
23. Mutatu, W. **October 4, 2008 Poster** "Biocatalytic synthesis of β -amino acids using phenylalanine aminomutase" XXVIII Midwest Enzyme Chemistry Conference (MECC), University of Chicago, Biological Sciences Learning Center, Chicago, IL, USA.

Publications and Patents

1. Al-Hilfi, A.; Li, Z.; Merz, K.M.; Nawarathne, I.N.; Walker, K.D. **2024**. Biocatalytic and regioselective exchange of 2-O-benzoyl for 2-O-(*m*-substituted)benzoyl groups to make precursors of next-generation paclitaxel drugs. *ChemCatChem*, 16, e202400186.
2. **PATENT**: Biocatalytic coupling reactions toward regioisomerically enriched alkyl pyrazines. Attanayake, G.; Mao, G.; Walker, K.D. Filed, 13 July 2022, International Application No. PCT/US2022/073705, Patent Number: WO2023288257A2; Publication Date: **19 January 2023**. Assignee: Conagen, Inc., Board of Trustees of Michigan State University.
3. Parks, H.M.; Cinellia, M.A.; Bedewitz, M.A.; Grabarb, J.M.; Hurney, S.M.; Walker, K.D.; Jones, A.D.; Barry C.S. **2023** Redirecting tropane alkaloid metabolism reveals pyrrolidine alkaloid diversity in *Atropa belladonna*. *New Phytol.*, 237, 1810-1825.

4. **Provisional PATENT:** Attanayake, G.; Mao, G.; Walker, K.D. **2022** Developing a semibiocatalytic process toward regioisomerically enriched alkyl pyrazines. Filed: July 2022.
5. Attanayake, G.; Mao, G.; Walker, K.D. **2021** A semibiocatalytic approach toward regioisomerically enriched ethyl dimethylpyrazines important in the flavor industries. *J. Agric. Food Chem. (ACS)*, 2021, 69 (50) 15314–15324.
6. Shee, P.K.; Yan, H.; Walker, K. D. **2020** Stereoselective α -amination of enantioenriched *trans*-3-phenylglycidates to make *anti*-phenylserines by a repurposed α/β -isomerase. *ACS Catal.* 10, 15071-15082.
7. Sullivan, S.A.; Nawarathne, I.; Walker, K. D. **2020** CoA recycling by a benzoate coenzyme A ligase in cascade reactions with aroyltransferases to biocatalyze paclitaxel analogs. *Arch. Biochem. Biophys.* 683, 108276.
8. Shee, P.K.; Ratnayake, N.D.; Walter, T.; Goethe, O.; Onyeozili, E.N.; Walker, K. D. **2019** Exploring the scope of an α/β -aminomutase for the amination of cinnamate epoxides to arylserines and arylisoserines. *ACS Catal.* 9, 7418-7430.
9. Attanayake, G. K.; Walter, T.; Walker, K. D. **2018** Understanding which residues of the active site and loop structure of a tyrosine aminomutase define its mutase and lyase activities. *Biochemistry (ACS)*, 57 (25), 3503-3514.
10. Walker, K., **2017** Biosynthesis of paclitaxel intermediate. US Patent App. 15/671,882, 2017.
11. Thornburg, C.K., Walter, T., Walker, K.D., **2017** Paclitaxel biocatalysis of a paclitaxel analog: Conversion of baccatin III to *N*-debenzoyl-*N*-(2-furoyl)paclitaxel and characterization of an amino phenylpropanoyl CoA transferase. *Biochemistry (ACS)*, 56 (44), 5920–5930.
12. Muchiri, R., Walker, K. D. **2017** Paclitaxel Biosynthesis: adenylation and thiolation domains of an NRPS TycA PheAT module produce various arylisoserine CoA thioesters. *Biochemistry (ACS)*, 56 (10), 1415–1425.
13. Sa, N., Rawat, R., Thornburg, C., Walker, K.D., and Roje, S. **2016 (Featured Article)** Identification and characterization of the missing phosphatase on the riboflavin biosynthesis pathway in *Arabidopsis thaliana*, *The Plant Journal*, 88 (5), 705-716. **Cover Art.**
14. Walter, T., Wijewardena, D., and Walker, K.D. **2016** Mutation of aryl binding-pocket residues results in an unexpected activity switch in an *Oryza sativa* tyrosine aminomutase, *Biochemistry (ACS)* 55 (25), 3497–3503, doi: 10.1021/acs.biochem.6b00331.
15. Wijeratne, S., Liu, W., Dong, J., Ning, W., Ratnayake, N.D., Walker, K.D., Bruening, M.L., **2016** Layer-by-layer deposition with polymers containing nitrilotriacetate, a convenient

- route to fabricate metal- and protein-binding films, *ACS Appl. Mater. Interfaces* 8, 10164–10173.
16. Walter, T., King, Z., and Walker, K. D., **2016** A Tyrosine Aminomutase from Rice (*Oryza sativa*) Isomerizes (S)- α - to (R)- β -Tyrosine with Unique High Enantioselectivity and Retention of Configuration, *Biochemistry (ACS)*, 55 (1), 1–4.
 17. Ratnayake, N. D., Theisen, C., Walter, T., and Walker, K. D., **2016** Whole-Cell Biocatalytic Production of Variously Substituted β -Aryl- and β -Heteroaryl- β -Amino Acids, *J. Biotechnol.*, 217, 12–21.
 18. Thornburg, C.K., Wortas-Strom, S., Nosrati, M., Geiger, J.H., Walker, K.D., **2015** Kinetically and Crystallographically Guided Mutations of a Benzoate CoA Ligase (BadA) Elucidate Mechanism and Expand Substrate Permissivity. *Biochemistry (ACS)*: 50(40), 6230–6242.
 19. Ratnayake, N. D.; Liu, N.; Kuhn, L. A.; Walker, K. D., **2014** Ring-Substituted α -Arylalanines for Probing Substituent Effects on the Isomerization Reaction Catalyzed by an Aminomutase. *ACS Catalysis*, 4 (9), 3077-3090.
 20. Yanfang, Y., Hainan, Z., Roberto, A. B., Baohong, Z., Guiling, S., Iain, W. W., Fuliang, X., Kevin, D. W., Joshua, W. P., Robert, B., Guangwu, G., Li, C., Yong, Z., Xin, H., Qi, T., Hongwei, L., Matthew, I. B., Deyou, Q., Jinsheng, L., Angela, H. **2014** Genome Sequencing and Analysis of the Paclitaxel-producing Endophytic Fungus *Penicillium aurantiogriseum* NRRL 62431. *BMC Genomics*, 15 (1).
 21. Wanninayake, U., and Walker, K.D. **2013** A Bacterial Tyrosine Aminomutase Proceeds Through Retention or Inversion of Stereochemistry to Catalyze Its Isomerization Reaction. *J. Amer. Chem. Soc.* 135, 11193-11204.
 22. Wanninayake, U, Walker, KD. **2012** Assessing the Deamination Rate of a Covalent Aminomutase Adduct by Burst Phase Analysis. *Biochemistry (ACS)* 51, 5226-5228
 23. **Provisional PATENT:** Walker, KD. **2012** Biosynthesis of Paclitaxel Intermediate. Provisional Patent, Michigan State University, June, 14 2012: TEC2012-0076 3000.075WO1
 24. Muchiri, R. and Walker, KD **2012** Taxol Biosynthesis: Tyrocidine Synthetase A Catalyzes the Production of Phenylisoserinyl-CoA and Other Amino Phenylpropanoyl Thioesters. *Chem. Biol.* 19, 679-685
 25. Strom, S., Wanninayake, U., Ratnayake, N.D., Walker, K.D., Geiger, J.H. **2012** Insights into the Mechanistic Pathway of the *Pantoea agglomerans* Phenylalanine Aminomutase. *Angew. Chem. Int. Ed. Engl.* 51, 2898–2902
 26. Wanninayake, U., DePorre, Y., Ondari, M., and Walker, K. D. **2011** (S)- α -Styrylalanine Used to Probe the Intermolecular Mechanism of an Intramolecular MIO-Aminomutase. *Biochemistry (ACS)*, 50,10082–10090

27. Ratnayake D.N., Wanninayake, U., Geiger, J.H., Walker K.D. **2011**. The Stereochemistry and Mechanism of a Microbial Phenylalanine Aminomutase. *J. Amer. Chem. Soc.* 133, 8531-8533
28. Feng, L, Wanninayake, U, Strom, S, Geiger, J, and Walker, KD **2011**. Mechanistic, Mutational, and Structural Evaluation of a *Taxus* Phenylalanine Aminomutase, *Biochemistry (ACS)* 50, 2919-2930.
29. Wijeratne S, Byrne NA, Walker KD. **2010**. Separation of α - from β -Arylalanines by Nickel Nitrioltriacetate Chromatography. *J. Sep. Sci.* 33, 1279-1282.
30. Nawarathne, IN and Walker, KD. **2010** Point Mutations (Q19P and N23K) Increase the Operational Solubility of a 2-O-Benzoyltransferase that Conveys Various Acyl Groups from CoA to a Taxane Acceptor, *J. Nat. Prod.* 73, 151-159.
31. Cox, BM, Bilsborrow JB, and Walker KD. **2009** Enhanced Conversion of Racemic α -Arylalanines to (R)- β -Arylalanines by Coupled Racemase/Aminomutase Catalysis. *J. Org. Chem.* 74, 6953-6959
32. **Provisional PATENT:** Walker KD and Cox, B. **2009** Enhanced Conversion of Racemic α -Arylalanines to (R)- β -Arylalanines by Coupled Racemase/Aminomutase Catalysis. Provisional Patent, Michigan State University, Nov, 11 2010: US 20100285540
33. Nevarez D, Mengistu Y, Nawarathne I, and Walker KD. **2009** An *N*-Aryltransferase of the BAHF Superfamily Shows Broad Specificity *In vitro* for Several Taxol Analogs and Aroyl CoAs. *J. Am. Chem. Soc.* 131, 5994-6002
34. Ondari ME and Walker KD. **2009** Synthesis of 4-Deacetyl-1-dimethylsilyl-7-triethylsilylbaccatin III. *J. Org. Chem.* 74, 2186-2188
35. **Provisional PATENT:** Walker KD and Ondari ME. **2008** One-Pot Tri-Silylation and Modification of Other Reaction Parameters Shortens the Synthetic Routes to Next-Generation Taxoids. Provisional Patent, Michigan State University, TEC2009-0049-01Prov
36. Ondari ME and Walker KD. **2008** Taxol Pathway 10-O-Acetyltransferase Shows Regioselective Promiscuity with the Oxetane Hydroxyl of 4-Deacetyltaxanes, *J. Amer. Chem. Soc.* 130, 17187-17194.
37. Mutatu W, Klettke KL, Foster C, and Walker KD. **2007** Unusual Mechanism for an aminomutase rearrangement: Retention of configuration at the migration termini, *Biochemistry* 46, 9785-9794
38. Klettke K, Sanyal S, Mutatu W and Walker KD **2007** β -Styryl- and β -aryl- β -alanine products of phenylalanine aminomutase catalysis, *J. Amer. Chem. Soc.* **129**, 6988-6989. **Received SYNFACT OF THE MONTH recognition (Synfacts 2007, 8, 0865-0865)**

39. Loncaric C, Merriweather E, and Walker KD. **2006** Profiling a Taxol Pathway 10 β -Acetyltransferase: Assessment of the Specificity and the Production of Baccatin III by *In Vivo* Acetylation in *E. coli*. *Chem. Biol.* 13, 309-317
 40. Loncaric C, Ward AF, Walker KD. **2007**. Expression of an acetyl-CoA synthase and a CoA-transferase in *Escherichia coli* to produce modified taxanes in vivo. *Biotechnol J.* **2**, 266-274.
 41. Walker KD, Klettke K, Akiyama T, and Croteau R. **2004** Cloning, Heterologous Expression and Characterization of a Phenylalanine Aminomutase Involved in Taxol Biosynthesis. *J. Biol. Chem.* **279**, 53947-53954.
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Prior to Independent Career

42. **PATENT:** Croteau RB, Walker KD, Schoendorf A, and Wildung MR. **2006** Transacylases of the paclitaxel biosynthetic pathway in *Taxus cuspidata*, Patent No. 2003-415197, 7153676, Washington State University Research Foundation, USA, 110 pp.
43. Chau M, Walker K, Long R, and Croteau R. **2004** Regioselectivity of Taxoid-O-acetyltransferases: Heterologous Expression and Characterization of a new Taxadien-5 α -ol-O-acetyltransferase. *Arch. Biochem. Biophys.* 430, 237-246.
44. Jennewein S, Wildung MR, Chau M, Walker K, and Croteau, R. **2004** Random sequencing of an induced *Taxus* cell cDNA library for identification of clones involved in Taxol biosynthesis. *Proc. Nat. Acad. Sci.*, USA 101, 9149-9154.
45. Chau M, Jennewein S, Walker K, and Croteau R. **2004** Taxol Biosynthesis: Molecular Cloning and Characterization of a Cytochrome P450 Taxoid 7 β -Hydroxylase. *Chem. Biol.*, 11, 663-672.
46. Walker K, Fujisaki S, Long R, and Croteau R. **2002** Molecular Cloning and Heterologous Expression of the C-13 Phenylpropanoid Side Chain-CoA Acyltransferase Functioning in Taxol Biosynthesis. *Proc. Nat. Acad. Sci.*, USA 99, 12715-12720.
47. Walker K, Long R, and Croteau R. **2002** The Final Acylation Step in Taxol Biosynthesis: The Cloning of the Taxoid Side-Chain *N*-Benzoyltransferase from *Taxus*. *Proc. Nat. Acad. Sci.*, USA, 99, 9166-9171.
48. Walker K and Croteau R. **2001** Taxol Biosynthetic Genes. *Phytochemistry*, 58, 5-11.
49. Walker K and Croteau R. **2000** Taxol Biosynthesis: Molecular Cloning of a Benzoyl-CoA:Taxane 2 α -O-Benzoyltransferase cDNA from *Taxus* and Functional Expression in *Escherichia coli*. *Proc. Nat. Acad. Sci.*, USA, 97, 13591-13596.

50. Walker K and Croteau R. **2000** Molecular Cloning of a 10-Deacetylbaaccatin III-10-O-Acetyl Transferase cDNA from *Taxus* and Functional Expression in *Escherichia coli*. *Proc. Nat. Acad. Sci., USA*, **97**: 583-587.
51. Walker K, Schoendorf A, and Croteau R. **2000** Molecular Cloning of a Taxa-4(20),11(12)-dien-5 α -ol-O-Acetyl Transferase cDNA from *Taxus* and Functional Expression in *Escherichia coli*. *Arch. Biochem. Biophys.*, 374, 371-380.
52. **PATENT**: Croteau RB, Walker KD, Schoendorf A, Wildung MR, and Hezari M. **1999** cDNA Clones for Transacylases of the Taxol Biosynthetic Pathway. US and Foreign Patent, PCT Int. Appl. (2001), 162 pp.
53. Walker K and Croteau R. **1999** Taxol Biosynthesis: A Review of Some Determinant Steps. *Recent Advances in Phytochemistry* 33, 31-50.
54. Walker K, Ketchum REB, Hezari M, Gatfield D, Goleniowski M, Barthol A, and Croteau R. **1999** Partial Purification and Characterization of Acetyl Coenzyme A: Taxa-4(20),11(12)-dien-5 α -ol-O-Acetyl Transferase that Catalyzes the First Acylation Step of Taxol Biosynthesis. *Arch. Biochem. Biophys.* 364, 273-279.
55. Walker KD and Floss HG. **1998** Detection of a Phenylalanine Aminomutase in Cell-Free Extracts of *Taxus brevifolia* and Preliminary Characterization of Its Reaction. *J. Am. Chem. Soc.* 120, 5333-5334.
56. Walker KD. **1997** The use of stereospecifically labeled phenylpropanoid compounds to determine the steric course of key reaction steps in the biosynthesis of Taxol, hyoscyamine and cycloheptyl fatty acids, Thesis, 142 pp.
57. Moore BS, Walker KD, Tornus I, Handa S, Poralla K, and Floss HG. **1997** Biosynthetic Studies of ω -Cycloheptyl Fatty Acids in *Alicyclobacillus cycloheptanicus*, Formation of Cycloheptanecarboxylic Acid from Phenylalanine and Phenylacetic Acid. *J. Org. Chem.* 62, 2173-2185.
58. Chesters NCJE, Walker K, O'Hagan D, and Floss HG. **1996** The Biosynthesis of tropic Acid: A Reevaluation of the Stereochemical Course of the Conversion of Phenyllactate to Tropate in *Datura stramonium*. *J. Am. Chem. Soc.* 118, 925-926.
59. Fleming PE, Floss HG, Haertel M, Knaggs AR, Lansing A, Mocek U, and Walker KD. **1994** Biosynthetic Studies on Taxol. *Pure and Appl. Chem.* **66**: 2045-2048.
60. Han K-Y, Fleming P, Walker K, Loper M, Chilton WS, Mocek U, Gordon MP, and Floss HG. **1994** Genetic Transformation of Mature *Taxus*: An approach to Genetically Control the *in vitro* Production of the Anticancer Drug, Taxol. *Plant Science* 95, 187-196.
61. Hollingworth, Jr TA, Kaysner CA, Colburn KG, Sullivan JJ, Abeyta Jr C, Walker KD, Torkelson Jr JD, Throm HR, and Wekell MM. **1991** Chemical and Microbiological Analysis of Vacuum-packed, Pasteurized Flaked Imitation Crabmeat. *J. Food Sci.* 56, 164-167.

62. Hungerford JM, Walker KD, Wekell MM, LaRose JE, and Throm HR. **1990** Selective Determination of Histamine by Flow Injection Analysis. *Anal. Chem.* 62, 1971-1976.
 63. Hungerford JM, Walker KD, Torkelson JD, Steinbrecher K, and Wekell MM. **1990** Determination of Tri-n-butyltin in Oysters by Reaction-Gas Chromatography of Hydride Derivatives. *Talanta* 37, 975-979.
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