

**PARMINDER KAUR, Ph.D.**  
**ASSOCIATE PROFESSOR**  
**Department of Chemistry, William Paterson University**  
**300 Pompton Road, Wayne, NJ 07470**

**APPOINTMENTS**

<b>Associate Professor</b> , William Paterson University, NJ	<b>Sep 2020-present</b>
<b>Assistant Professor</b> , William Paterson University, NJ	<b>Jan, 2015-Aug, 2020</b>
<b>Postdoctoral Fellow</b> , UC at Irvine, CA	<b>Aug, 2011-Dec, 2014</b>
<b>Postdoctoral Fellow</b> , Northwestern University, IL	<b>Aug, 2010-Aug, 2011</b>

**EDUCATION**

<b>University of California, Irvine, CA</b> Postdoctoral Fellow, Department of Pharmaceutical Sciences. Research focuses on the synthesis of ergot alkaloid based P450 inhibitors and their protein-binding studies	<b>Aug, 2011-Dec, 2014</b>
<b>Northwestern University, Evanston, IL</b> Postdoctoral Research Fellow, Department of Chemistry, Research based on the synthesis and characterization of porphyrin- and dipyrindyl-based Metal-Organic Frameworks (MOFs) and catechol-based Porous Organic Polymers (POPs)	<b>Aug, 2010-Aug, 2011</b>
<b>Texas Tech University, Lubbock, TX</b> Ph.D., Organic Chemistry, Department of Chemistry and Biochemistry, Thesis Title: "Chiral and achiral <i>N</i> -phosphonyl imine chemistry and GAP synthesis of amino derivatives"	<b>Aug, 2005-Aug, 2010</b>

**RESEARCH EXPERIENCE**

**University of California, Irvine:** (Advisor: **Prof. A Richard Chamberlin**)  
Developed novel ergot alkaloid and peptide-based probes as P450 inhibitors.

**Northwestern University:** (Advisors: **Profs. Joseph T. Hupp and SonBinh T. Nguyen**)  
Synthesized and characterized porphyrin- and dipyrindyl-based Metal-Organic Frameworks (MOFs) and catechol-based Porous Organic Polymers (POPs).

**Texas Tech University:** (Advisor: **Prof. Guigen Li**)  
Designed and developed novel chiral phosphoramidate and chiral *N*-phosphonyl imines for the synthesis of pharmaceutically important natural and unnatural amino acids.

**TEACHING EXPERIENCE**

**William Paterson University, Department of Chemistry, Wayne, NJ** **Jan 2015-present**

Undergraduate Courses	Graduate Courses
CHEM 4270-01: Biochemistry-I (Lecture and Lab)	CHEM 6008: Biomaterials and Polymers
CHEM 2580-01: Organic Chemistry - II (Lecture and Lab)	CHEM 6002: Organic Materials
CHEM4820-01: Senior Research in Chemistry	CHEM 6009-01: Applications of Materials
CHEM 2570: Organic Chemistry-I	CHEM 6011: Laboratory Research-I
CHEM 4440: Medicinal Chemistry	CHEM 6012-01: Laboratory Research – II
CHEM 4450: Modern Methods in Drug Design (Lecture and Lab)	CHEM 6012-01: Laboratory Research – III
CHEM 4800: Seminar	
CHEM 4220: Advanced Organic Chemistry-I	

**MENTORING EXPERIENCE**

<b>William Paterson University, Department of Chemistry, Wayne, NJ</b> <b>Assistant Professor of Chemistry</b> <b>Research Area:</b> Development of non-precious metal catalyzed C-H functionalization, Metal-organic Frameworks as catalysts, Magnetic nanoparticles as simpler and efficient catalytic systems	<b>Jan 2015-present</b>
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**List of Student Mentees:** Since 2015, I have mentored 30 students (undergraduate and graduate) and 18 students have done senior research course. Several of those students have received the GLSAMP scholarship and Dean's student assistantships.

<b>Undergraduate Students</b>	
Courtnee Aristil (current student)	Tatiana Hapatsha
Abigail Cooper (current student)	Chelsea Sweet
Juan Rodriguez (current student)	Dina Moustafa
Benjamin Ramos (current student)	Sarafina Caratelli
Prachi Rana (current student)	Laurice Quiambao
Danielle Philip	Nicholas Mully
Ian Hicks	Hyun Lim
Rania Teriak	Giovanni Barerra
Kimberly Valdivia	Emir Sehovic
Basit Qurbanzada	Prianka Chohan
Amy Collado	Vicklyn Datilus
Maria Chavez	Ronit Patel (High School Student, Summer 2019)
Brenda Calalpa	Andrew Patrizio
Mary AbdulKarim	Timothy Hoffman
Melanie Vasquez	Janine Almalel
<b>Graduate Students</b>	
Basit Qurbanzada (Current Graduate Student)	Tatiana Hapatsha ( <i>Graduated: Spring 2021</i> )
Emir Sehovic (Current Graduate Student)	Chelsea Sweet ( <i>Graduated: Spring 2020</i> )
Maria Chavez ( <i>Graduated: Spring 2021</i> )	Dina Moustafa ( <i>Graduated: Spring 2020</i> )

### **CURRICULUM DEVELOPMENT**

<b><u>Undergraduate Courses</u></b>	<b><u>Graduate Courses</u></b>	<b><u>Programs Co-developed</u></b>
Advanced Organic Chemistry	Organic Materials	BS in Medicinal Biochemistry
Medicinal Chemistry	Application of Materials	MS in Materials Chemistry
Seminar in Chemistry	Biomaterials and Polymers	
Green and Sustainable Chemistry		
Modern Methods in Drug Design		
Chemistry of Cannabis (Certificate program)		
Green and Sustainable Chemistry (Certificate Program)		

### **List of PUBLICATIONS AND PATENTS**

**Since Joining WPU (Undergraduate student co-authors are underlined, Graduate student co-authors are italics)**

1. New manganese-terpyridine based catalytic system for the dehydrogenative coupling of alcohols and amines for the synthesis of aldimines. Hyun Lim, Prianka Chohan, *Dina Moustafa*, *Chelsea Sweet*, Brenda Calalpa and Parminder Kaur. *Chemistry Select*, **2018**, 3, 9443. (DOI: [10.1002/slct.201801325](https://doi.org/10.1002/slct.201801325)).
2. Novel CYP34A-specific Inhibitors and Methods of Using Same. Publication No. WO/2017/04474, International application no. PCT/US2016/050944), *March 2017*.

3. Ter-pyridine catalyzed allylation of aldehydes and ketones under metal-free condition. Vicklyn Datilus, Mary Abdulkarim, Andrew Patrizio and Parminder Kaur. *Tetrahedron Lett*, **2016**, 57, 2880. (DOI: [10.1016/j.tetlet.2016.05.040](https://doi.org/10.1016/j.tetlet.2016.05.040)).

4. Structure-Based Inhibitor Design for Evaluation of a CYP3A4 Pharmacophore Model. Parminder Kaur, Irina F. Sevrioukova, Thomas L. Poulos and A. Richard Chamberlin *Journal of Medicinal Chemistry*, **2016**, 59, 4210 (as part of the special issue of “Computational Methods”), (DOI: [10.1021/acs.jmedchem.5b01146](https://doi.org/10.1021/acs.jmedchem.5b01146)).

#### **Before Joining WPU (selected list)**

1. Modeling linear PKS intermediates through atom replacement. Gaurav Shakya, David Lee, Matthew Jaremko, James LaClair, Heriberto Rivera, Daniel Fox, Parminder Kaur, Emily Gwozdziowski, Fiona Wong, Sheryl Tsai and Michael Burkart. *J. Am. Chem. Soc.*, **2014**, 136 (48), 16792.

2. Porous organic polymers (POPs) in catalysis - Opportunities and Challenges. Parminder Kaur, Joseph T. Hupp and SonBinh T. Nguyen *ACS catalysis* **2011**, 1(7), 819. (Top 10 Most Read Articles in Q3 2011 from ACS Catalysis)

3. The GAP chemistry for chiral N-phosphonyl imine-based Strecker reaction. Parminder Kaur, Walter Wever, Suresh Pindi, Raizada Milles, Peng Gu, Min Shi and Guigen Li *Green Chemistry* **2011**, 13, 1288.

4. A new rapid multicomponent domino reaction for the formation of functionalized benzo[h]pyrazolo[3,4-b]quinolines. Bo Jiang, Ge Zhang, Ning Ma, Feng Shi, Shu-Jiang Tu, Parminder Kaur and Guigen Li *Org. Biomol. Chem.* **2011**, 9, 3834.

5. Asymmetric hydrophosphylation of chiral N-phosphonyl imines provides an efficient approach to chiral  $\alpha$ -amino phosphates. Parminder Kaur, Walter Wever, Trideep Rajale and Guigen Li. *Chemical Biology and Drug Design* **2010**, 76(4), 314.

6. Chiral N-phosphonylimine chemistry: A convenient asymmetric method for the synthesis of N-phosphonyl substituted chiral propargylamines. Parminder Kaur, Gaurav Shakya, Sun Hao, Yi Pan and Guigen Li *Org. Biomol. Chem.* **2010**, 8, 1091.

7. Four-component domino reaction providing an easy access to multifunctionalized tricyclo [6.2.2.0] dodecane derivatives. Bo Jiang, Chao Li, Feng Shi, Shu-Jiang Tu, Parminder Kaur, Walter Wever and Guigen Li *J. Org. Chem.* **2010**, 75, 2962.

8. N-phosphinyl imine chemistry (I): Design and synthesis of novel N-phosphinyl imines and their application to asymmetric aza-henry reaction. Suresh Pindi, Parminder Kaur, Gaurav Shakya and Guigen Li *Chemical Biology and Drug Design* **2010**, 77(1), 20.

9. Chiral N-phosphonylimine chemistry: A convenient asymmetric method for the synthesis of N-phosphonyl  $\beta$ -amino Weinreb amides. Parminder Kaur, Thao Nguyen and Guigen Li *Eur. J. Org. Chem.* **2009**, 912.

10. Four-component domino reaction leading to multifunctionalized quinazolines. Bo Jiang, Shu-Jiang Tu, Parminder Kaur, Walter Wever and Guigen Li *J. Am. Chem. Soc.* **2009**, 11660.

11. Chiral N-phosphonylimine chemistry: Asymmetric additions of malonate-derived enolates to chiral N-phosphonyl imines for the synthesis of  $\beta$ -aminomalonates. Zhong-Xiu Chen, Teng Ai, Parminder Kaur and Guigen Li *Tetrahedron Lett.* **2009**, 50, 1079.

12. Chiral N-phosphonyl imine chemistry: Asymmetric aza-Henry reaction. Adishesu Kattuboina, Parminder kaur, Teng Ai, Guigen Li. *Chemical Biology and Drug Design* **2008**, 71(3), 216.

13. Chiral N-phosphonylimine chemistry: Asymmetric 1,2-additions of allylmagnesium bromides. Adishesu Kattuboina, Parminder Kaur, Thao Nguyen and Guigen Li *Tetrahedron Lett.* **2008**, 49, 3722.

14. Novel approach to multifunctionalized homoallylic alcohols via regioselective ring-opening of aryl oxiranes with 3-Iodo Allenates. Adishesu Kattuboina, Parminder Kaur, Cody Timmons and Guigen Li *Org. Lett.* **2006**, 8, 2771.

#### **Selected list of PROPOSALS/AWARDS:**

<b>PROPOSAL/AWARDS</b>	<b>RESULT</b>
Functionalization of allylic C(sp <sup>3</sup> )-H via oxidative coupling using non-precious metal catalyst - American Chemical Society- Petroleum Research Fund (ACS-PRF) (UR category)	2019 (Not funded)
Green Chemistry Award, <i>Pfizer</i>	2018 (Funded \$5000.00)
Center for Research Summer Grant, WPU. Proposal “Nickel-catalyzed cross-dehydrogenative coupling reactions: Synthesis of Guerbet Alcohols and Alkynylphosphonates”	2018 (Funded: \$4000.00)
CAREER Non-precious metal pincer-type catalysts for organic transformations (NSF-CAREER)	2017 (Not Funded)
Non-precious metal-based catalysis American Chemical Society- Petroleum Research Fund (ACS-PRF)	2017 (Not funded)
Center for Research Summer Grant, WPU. Proposal “Non-precious metal catalyzed cross-dehydrogenative coupling reactions	2017 (Funded: \$6064.00)
Mn-Terpyridine catalyst systems for various cross-dehydrogenative coupling reactions (Assigned Release Time)	2017 (Granted ART)
Non-precious metal-based pincer complexes as catalyst	2016 (Funded: \$5920.00)
Novel prolinol and oxazolidinone based chiral imine auxiliaries	2015 (Funded: \$4960)
New class of chiral phosphoramides for chiral auxiliary based organic synthesis American Chemical Society- Petroleum Research Fund (ACS-PRF)	2015 (Not Funded)

## **SELECTED COMMUNITY SERVICE**

- Guest Editor, Special Issue: Synthesis of metal-organic frameworks and their use as catalysts” *Molecules*, a MDPI journal [https://www.mdpi.com/journal/molecules/special\\_issues/MOF\\_Catalysts](https://www.mdpi.com/journal/molecules/special_issues/MOF_Catalysts), June 2022.
- Editorial Board member for *Organics*, an international, peer-reviewed, open access journal of organic chemistry, published quarterly online by MDPI, 2021-present.
- Session Presider, American Chemical Society National meeting, Boston, MA, USA, Fall 2018.
- Co-coordinator for Masters in Materials Chemistry, WPU, 2017-2019.
- Member of the Pre-professional, scheduling, TAC and UCC committee, WPU 2018-present.
- Member of Center for Research Committee, WPU 2020-present.
- Reviewer for peer-reviewed journals: *Tetrahedron*, *Tetrahedron letters*, *European Journal of Chemistry*, *Bio-Organic and Medicinal Chemistry Letters*, *Bio-organic and Medicinal Chemistry*.
- One-day CAREER workshop, Department of Chemistry, WPU, Summer 2015.
- Departmental seminar series coordinator, WPU, Spring 2017
- Departmental seminar series coordinator, WPU, Spring 2016
- Member of the recruitment committee, WPU
- Judge at the 9th-13th Annual Undergraduate Research Symposium, April 2015-2019, WPU
- Department of Chemistry representative at the Open House events, Spring 2019
- Department of Chemistry representative at the Open House events, Fall 2018
- Department of Chemistry representative at the Open House events, Spring 2018
- Department of Chemistry representative at the Open House events, Fall 2016
- Department of Chemistry representative at the Open House events, Spring 2016
- Department of Chemistry representative at the Open House events, Fall 2015
- Department Safety Officer, Spring 2015-Spring 2016
- Served as a Judge at the oral and poster presentations in the “California State Science Fair” (2012-2014).
- Served as a Judge at UCI undergraduate symposium, 2013
- Served on the organizing committee of 5th Annual Symposium on “Frontiers in biomedical Research”, April 14-16, 2004, India.

## **SELECTED LIST of ORAL AND POSTER PRESENTATIONS**

- Invited speaker: International Conference “Emerging Trends in Chemical and Applied Sciences for Sustainable Future” October 2021
- WPU Annual Undergraduate Symposium, April 2021
- 11th GSSLAMP Annual Conference, October 2019
- 258th ACS National Meeting, San Diego, CA, August 2019
- MARM, ACS regional meeting, Baltimore, MD, June 2019
- Presented at Explorations, WPU, April 2019
- WPU Annual Undergraduate Symposium, April 2019
- 10th GSSLAMP Annual Conference, October 2018
- 256th ACS National Meeting, August 2018, Boston, MA
- Chemistry of Cuisine workshop, WPU, June 2018
- Presented at Explorations, WPU, April 2018
- WPU Annual Undergraduate Symposium, April 2018
- 9th GSSLAMP Annual Conference, October 2017
- 254th ACS National Meeting, Washington, DC, August 2017
- Invited Talk- City College of New York, Chemistry Department, NY, October 2017
- MARM, ACS regional meeting, Hershey’s, PA, June 2017
- Gordon Research Conference, Bio-Organic Chemistry, Proctor Academy, NH, June 2017
- Presented at Explorations, WPU, April 2017
- WPU Annual Undergraduate Symposium, April 2017
- Voluntarily presented at the TAC sessions, Explorations, WPU, April 2017
- 9th GSSLAMP Annual Conference, October 2016
- 252nd ACS National Meeting, Philadelphia, MA, August 2016
- Presented at Explorations, WPU, April 2016
- WPU Annual Undergraduate Symposium, April 2016
- 250th ACS National Meeting, Boston, MA, August 2015
- ACS National Meeting, New Orleans, LA, April 2013
- ACS National Meeting, San Deigo, CA, March 2012
- Pharmacology and Pharmaceutical Sciences Meeting at UC, Irvine, May-2012
- International Conference on “Chemistry Biology Interface: Synergistic New Fronteirs”, Nov 21-26, 2004, India
- 5th Annual Symposium on “Frontiers in biomedical Research”, April 14-16, 2004, India.

