

Breaking Mis-Conceptions: “Non-Scientific” Solutions to “Scientific” Problems

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During different career phase of a scientist, many consequential decisions need to be made, amongst a few are seemingly of non-scientific reasons. This is becoming especially more relevant as role of scientists is continually changing with the expanded impact of science to the whole society.

In this discussion, we would like to think about a few topics of interest followed by a couple of case-studies to highlight different fundamentals of decision making processes involved in varying science-related endeavors. We will also attempt to identify a common thread that might have general applicability amongst these examples.

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- Education**
- Ph.D.** in Organic Chemistry **Princeton University**, Princeton, NJ 2001-2006
Thesis Title: Development of Synthetic Methods for C-O and C-C Bond Formations via Transition Metal Catalysis
- M.S.** in Organic Chemistry **Seoul National University**, Seoul, Korea 1999-2001
Thesis Title : Total synthesis of Ambruticin
- B.S.** in Chemistry **Seoul National University**, Seoul, Korea 1995-1999
Thesis Title : Synthetic Studies on Radical Cyclization of α -hydroxy- β -alkoxy acrylates
- Academic Experience**
- Acting Associate Director** January 2019 - Current
Princeton Univ. / Peking Univ.-Shenzhen Drug Discovery Initiative
- Associate Member, Cancer Pharmacology Program** October 2017 - Current
Rutgers-Cancer Institute of New Jersey
- Founding Director, Princeton University Screening Center** November 2013 - Current
Princeton University
- Organic Synthesis and Catalysis Specialist** November 2011-May 2013
Princeton University
- NIH/NCI Postdoctoral Research Associate** January 2007-October 2011
Princeton University
- Graduate Research Assistant** July 2001- December 2006
Princeton University
- Visiting Scientist** March-May 2001
Dept. of Chemistry "G. Ciamician" University of Bologna, Italy
- Graduate/ Undergraduate Research Assistant,** March 1998 – February 2001
Seoul National University, National Research Laboratory
- Entrepreneur Experience**
- Member** January 2019 - Current
Colorado Research Partners, LLC
- Co-Founder & Board director** October 2015 - Current
Crescenta Biosciences Inc .
- Co-Founder & Member** June 2009 - Current
Chiromics LLC

Teaching Experience	Junior Paper Advisor, Princeton University Chem 981	Sept. 2007 - Jan. 2008
	- Instruction of 3 students in the crafting of original proposal for submission of Junior Paper	
	Preceptor, Princeton University Chem 302	Feb. 2005 - May 2005
	- 4 review lectures per week with exam grading for sophomore organic chemistry course	
	Head Preceptor, Princeton University Chem 301A	Sept. 2004 - Jan. 2005
	- 3 review lectures per week with exam grading for sophomore organic chemistry course.	
	Preceptor, Princeton University Chem 303	Sept. 2002 - Jan. 2003
	- 4 review lectures per week with exam grading for sophomore organic chemistry course	

Awards & Honors

- First Place, 5th Innovation Forum, Princeton University 2010
- NIH/NCI NRSA Postdoctoral Fellowship 2007-2009
- Harold W. Dodds Honorific Fellowship, Princeton University 2005-2006
- KASBP-Daewoong Fellowship, KASBP 2006
- Pickering Teaching Award, Princeton University 2004-2005
- Bristol-Myers Squibb Graduate Fellowship in Synthetic Organic Chemistry 2003-2004
- Atofina Fellowship 2002-2003
- Hugh Stott Taylor Fellowship, Princeton University 2001-2005
- National Research Laboratory Fellowship, KISTEP 1999-2001
- Seoul National University Graduate Fellowship for Excellence in Physical Sciences 1999-2000

Publications

1. James Martin, Max Wilson, Ben Bratton, Sophia Li , **Hahn Kim**, Josh Rabinowitz, André Mateus , and Zemer Gitai “A pipeline for characterizing novel mechanisms of action identifies a dual-targeting resistance-resistant antibiotic” *In Revision*
2. Jonathan Ghergurovich , Juan Carlos Garcia Canaveras , Joshua Wang , Emily Schmidt , Zhaoyue Zhang , Tara TeSlaa , **Hahn Kim** and Josh Rabinowitz “A small molecule G6PD inhibitor reveals T cell dependence on the pentose phosphate pathway” *In Revision*
3. Gregory S. Ducker, Jonathan M. Ghergurovich, Nello Mainolfi, Vipin Suri, Stephanie K. Jeong, Sophia Hsin-Jung Li, Adam Friedman , Mark Manfredi, Zemer Gitai, **Hahn Kim** , Joshua D. Rabinowitz “Human SHMT inhibitors reveal defective glycine import as a targetable metabolic vulnerability of diffuse large B-cell lymphoma” *Proc. Natl. Acad. Sci. USA*. **2017**;114(43):11404-11409
4. Jon E. Paczkowski, Sampriti Mukherjee, Amelia R. McGready, Jian-Ping Cong, Brad R. Henke, Christopher J. Aquino, **Hahn Kim**, Chari D. Smith, & Bonnie L. Bassler* “Flavonoids suppress *Pseudomonas aeruginosa* virulence through allosteric inhibition of quorum-sensing receptors” *J. of Biological Chemistry*, **2017**, 292(10): 4064-4076.
5. **Hahn Kim** and David W. C. MacMillan* “Enantioselective Organo-SOMO Catalysis: The α -Vinylolation of Aldehydes” *J. Am. Chem. Soc.* **2008**, 130, 398.
6. **Hahn Kim**, Stephen D. Goble and Chulbom Lee* “Ruthenium Catalyzed Tandem Carboxylative Cyclization of 1,6-Diynes” *J. Am. Chem. Soc.* **2007**, 129, 1030.

7. **Hahn Kim** and Chulbom Lee* “Rhodium Catalyzed Cycloisomerization of *N*-Propargyl Enamine Derivatives” *J. Am. Chem. Soc.* **2006**, *128*, 6336.
8. **Hahn Kim** and Chulbom Lee* “Cycloisomerization of Enynes via Rhodium Vinylidene Mediated Catalysis” *J. Am. Chem. Soc.* **2005**, *127*, 10180.
9. **Hahn Kim**, Hongbin Men and Chulbom Lee* “Palladium-Catalyzed Stereoselective *O*-Glycosylation Using Glycals” *J. Am. Chem. Soc.* **2004**, *126*, 1336.
10. **Hahn Kim** and Chulbom Lee* “A Mild and Efficient Method for the Stereoselective Formation of C-O Bonds: Palladium-Catalyzed Allylic Etherification using Zinc(II) Alkoxides” *Org. Lett.* **2002**, *4*, 4369.
11. Eun Lee,* Seung Jib Choi, **Hahn Kim**, Hee Oon Han, Young Keun Kim, Sun Joon Min, Sung Hee Son, Sang Min Lim and Won Suk Jang “Total Synthesis of Ambruticin” *Angew. Chem., Int. Ed. Engl.* **2002**, *41*, 176.
12. Giuliana Cardillo,* Luca Gentilucci, Massimo Gianotti, **Hahn Kim**, Rossana Perciaccante and Alessandra Tolomelli “Conjugate Addition of Hydroxylamino Derivatives to Alkylidene Malonates in the Presence of Chiral Lewis Acids” *Tetrahedron: Asymmetry* **2001**, *12*, 2395.

Presentations & Posters

1. “Identification and characterization of inhibitors of hepatitis E virus infection” Ila Nimgaonkar, Nicholas F. Archer, Mohammad Shahradi, **Hahn Kim**, Alexander Ploss, 11th Morningside Symposium on Frontier Chemical Biology & PKU- Princeton Joint Symposium in Drug Discovery, Shenzhen, China, January 2019 (Poster)
2. “JMZG001: A Weapon in the Arms Race Against Antibiotic Resistance” James Martin, Max Wilson, Ben Bratton, Sophia Li, Josh Rabinowitz, André Mateus, **Hahn Kim**, and Zemer Gitai, 11th Morningside Symposium on Frontier Chemical Biology & PKU- Princeton Joint Symposium in Drug Discovery, Shenzhen, China, January 2019 (Poster)
3. “New chemical space: opportunities for novel science and translational value” Korea Institute of Science and Technology, Seoul, Korea, July 2018. (Invited oral presentation)
4. “New chemical space: opportunities for novel science and translational value” Korea Research Institute of Chemical Technology, Daejeon, Korea July 2018. (Invited oral presentation)
5. “Targeting the oxPPP: discovery and characterization of cell-active G6PD inhibitors” Jonathan Ghergurovich, Mark Esposito, Josh Wang, Li Chen, Yibin Kang, **Hahn Kim** and Josh Rabinowitz, *Thiol-Based Redox Regulation and Signaling, Gordon Research Conference*, Castelldefels, Spain, July 2018 (Poster)
6. “Studies on New Reaction Design, Catalysis Concept and Chemical Space” Dept. of Chemistry, Pusan National University, Pusan, Korea, July 2017. (Invited oral presentation)
7. “Multiple Functions of Mitochondrial Folate Metabolism” Raphael Morscher, Greg Ducker, Jonathan Ghergurovich, Li Chen, **Hahn Kim**, Vipin Suri, Nello Mainolfi, Adam Friedman, Mark Manfredi, and Joshua D. Rabinowitz, *Keystone Symposia in Tumor Metabolism: Mechanisms and Targets*, Whistler, British Columbia, Canada, March 2017. (Invited oral Presentation)
8. “Studies on New Reaction Design, Catalysis Concept and Chemical Space” HyoJong Research Labs, CKD

- pharma, Yong-In, Korea, July 2016. (Invited oral presentation)
9. "Studies on New Reaction Design, Catalysis Concept and Chemical Space" Seoul National University, Seoul, Korea, June 2016. (Invited oral presentation)
 10. "Organocascade Catalysis: A new synthetic strategy is taking Affinity Screening Mass Spectrometry to the next level" Stefan Gradl, Jay Conrad, Joel Austin, **Hahn Kim**, Paul Reider and David MacMillan, 248th ACS National Meeting, San Francisco, CA, August 2014. (Invited oral presentation)
 11. "Collaboration between pharma and academia: The combination of organocascade catalysis and affinity selection mass spectrometry for lead identification" **Hahn Kim**, Gregory Adam, Kevin Chapman, David MacMillan; 243th ACS National Meeting, San Diego, CA, March 2012. (Invited oral presentation)
 12. "Accelerated Lead Identification for Dipeptidyl Peptidase-4 Through the Combination of Organo-Cascade Catalysis and Affinity Selection Mass Spectrometry" Gregory Adam, Kevin Chapman, **Hahn Kim**, David MacMillan; 17th Society for Biomolecular Screening Annual Conference, Orlando, FL, March 2011. (poster)
 13. "Accelerated Lead Identification of DPP-4 via Organocascade / Affinity Selection Technology" Merck Co. & Inc., Rahway, NJ, October 2008. (Invited oral presentation)
 14. "Accelerated Lead Identification of DPP-4 via Organocascade / Affinity Selection Technology" 57th Natural Products Gordon Research Conference, Tilton, NH, July 2008. (poster)
 15. "Cycloisomerization of Enynes via Rhodium Vinylidene Mediated Catalysis" 229th ACS National Meeting, San Diego, CA, March 2005. (oral presentation)
 16. "Transition Metal Catalyzed C-O Bond Formations" Bristol-Myers Squibb Chemistry Award Symposium, Bristol-Myers Squibb, Wallingford, CT, May 2004. (Invited oral presentation)
 17. "Transition Metal Catalyzed C-O Bond Formations" Bristol-Myers Squibb Mini Symposium in Organic Synthesis, Princeton University, NJ, March 2004. (Invited oral presentation)
 18. "Total Synthesis of Ambruticin" Departmental Seminar, Dept. of Chemistry, "G. Ciamician" University of Bologna, Italy, May 2001. (Invited oral presentation)

Intellectual Properties

1. "Methods for modulating sirtuin enzymes"; Emre Koyuncu, **Hahn Kim**, Ileana Cristea, David MacMillan, Thomas Shenk; 2013; (provisional patent, licensed)
2. "Novel method of use for compounds with antibacterial activity" Zemer Gitai, Max Wilson, **Hahn Kim**; 2014; (provisional patent)
3. "Method of use for unique compounds with antibacterial activity" Zemer Gitai, Max Wilson, **Hahn Kim**; 2014; (provisional patent)
4. "SHMT inhibitors" ; U.S. Provisional Application Nos.: 62/131,205, Joshua Rabinowitz, Gregory Ducker, **Hahn Kim**, Jonathan Ghergurovich; 2015; (provisional patent, licensed)

5. "SHMT inhibitors" ; U.S. Provisional Application Nos.: 62/131,208, Joshua Rabinowitz, Gregory Ducker, **Hahn Kim**, Jonathan Ghergurovich; 2015; (provisional patent, licensed)
6. "SHMT inhibitors" ; U.S. Provisional Application Nos.: 62/131,209, Joshua Rabinowitz, Gregory Ducker, **Hahn Kim**, Jonathan Ghergurovich; 2015; (provisional patent, licensed)
7. "SHMT inhibitors" ; U.S. Provisional Application Nos.: 62/131,213, Joshua Rabinowitz, Gregory Ducker, **Hahn Kim**, Jonathan Ghergurovich; 2015; (provisional patent, licensed)
8. "SHMT inhibitors" ; U.S. Provisional Application Nos.: 62/131,215, Joshua Rabinowitz, Gregory Ducker, **Hahn Kim**, Jonathan Ghergurovich; 2015; (provisional patent, licensed)
9. "Methods for synthetic Lethal of MSH2 deletion" ; Alison Gammie, **Hahn Kim**, Irene Ojini. (provisional patent, licensed)
10. "SND1-Mtdh modulators for anti-cancer therapeutics" : Yibin Kang, **Hahn Kim**, Minhong Shen, Yong Wenfei (disclosure, licensed)
11. "new compounds for SHMT inhibition " Joshua Rabinowitz, Gregory Ducker, **Hahn Kim**, Jonathan Ghergurovich (provisional patent)