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## YOUNG-HOON AHN

Associate Professor  
Department of Chemistry  
Drexel University

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Google Scholar: <https://scholar.google.com/citations?user=eVLmUvQAAAAJ&hl=en>

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### Education

- Sept 2007 *Ph.D.*, Department of Chemistry, New York University, New York, NY  
Advisor: Young-Tae Chang, Ph.D.
- March 2001 *M.S.*, Department of Chemistry, Pohang University Science and Technology, Korea  
Advisor: Sung-Kee Chung, Ph.D.
- March 1999 *B.S.*, Department of Chemistry, *Magna Cum Laude*, Pohang University of Science and Technology, Korea

### Postdoctoral Training

- 2008-2012 *Postdoctoral Research Fellow*, Department of Pharmacology and Molecular Sciences, Johns Hopkins University School of Medicine, Baltimore, MD  
Advisor: Philip A. Cole, M.D., Ph.D.

### Academic Appointments

- 2022-present *Associate Professor with Tenure*, Department of Chemistry, Drexel University, PA
- 2018-2022 *Associate Professor with Tenure*, Department of Chemistry, Wayne State University, MI
- 2017-2020 Member, Cardiovascular Research Institute, Wayne State University
- 2013-2022 Member, Barbra Ann Karmanos Cancer Institute, Tumor and Microenvironment Program
- 2012-2018 *Assistant Professor*, Department of Chemistry, Wayne State University, MI

### Honors and Awards

- 2023 3rd Annual Dr. Schlick Memorial Lecture Speaker (Detroit Mercy)
- 2019-present Ad hoc Reviewer, National Institutes of Health Biological Chemistry and Macromolecular Biophysics (BCMB)
- 2017 WSU College of Liberal Arts and Sciences Teaching Award
- 2015 Ad hoc Reviewer, National Science Foundation Chemistry in Life Processes
- 2009 The 238<sup>th</sup> ACS National Meeting Travel Award
- 1999 *Magna Cum Laude*, Pohang University of Science and Technology
- 1996-1999 Undergraduate Scholarship, Pohang University of Science and Technology, Korea

### Professional Membership

- 2023-present Journal of Biological Chemistry, Editorial Board Member
- 2020-present Member, American Society for Biochemistry and Molecular Biology
- 2020-present Member, Sigma Xi Society
- 2017-present Member, American Heart Association
- 2016-2021 Scientific Report, Editorial Board Member
- 2006-present Member, American Chemical Society

## Publication

### From independent research:

1. Kukulage, D. S. K.; Matarage Don, N. N. J.; **Ahn, Y.H.\*** Protocol for clickable glutathione-based detection and proteomic identification of protein cysteine glutathionylation. *Current Protocol*, **2023**, 10, e907.
2. Kukulage, D. S. K.<sup>#</sup>; Yapa Abeywardana, M.<sup>#</sup>; Matarage Don, N. N. J.; Hu, R.-M.; Shishikura, K.; Matthews, M. L.; **Ahn, Y. H.\*** “Development and application of chemical proteomics identify p120-catenin glutathionylation regulating E-cadherin stability” *Cell Chemical Biology*, **2023**, *Accepted. In press.*  
<sup>#equal contribution.</sup>
3. Oppong, D.; Schiff, W.; Shivamadhu, M. C.; **Ahn, Y. H.\*** “Chemistry and Biology of Enzymes in Protein Glutathionylation” *Current Opinion in Chemical Biology*. **2023**, 75, 102326.
4. Kukulage, D. S. K.; Matarage Don, N. N. J.; **Ahn, Y. H.\*** “Emerging Chemistry and Biology in Protein Glutathionylation” *Current Opinion in Chemical Biology*. **2022**, 71, 102221.
5. Yapa Abeywardana, M.; Samarasinghe, K. T. G.; Munkanatta Godage, D. N. P.; **Ahn, Y. H.\*** “Identification and Quantification of Glutathionylated Cysteines under Ischemic Stress” *Journal of Proteome Research*. **2021**, 20, 4529-4542.
6. Ahuja, M.; Kaidery, N. A.; Attucks, O. C.; McDade, E.; Hushpulian, D. M.; Gaisin, A.; Gaisina, I.; **Ahn, Y. H.**; Nikulin, S.; Poloznikov, A.; Gazaryan, I.; Yamamoto, M.; Matsumoto, M.; Igarashi, K.; Sharma, S. M.; Thomas, B.\* “Bach derepression is neuroprotective in mouse model of Parkinson’s disease” *Proceedings of the National Academy Sciences of the United States of America*. **2021**, 118, e21111643118.
7. Adewale, A. O.; **Ahn, Y. H.\*** “Titin N2A Domain and Its Interactions at the Sarcomere” *International Journal of Molecular Sciences*. **2021**, 22, 7563.
8. Zhang, Y.; Gilmour, A.; **Ahn, Y. H.**; de la Vega, L.; Dinkova-Kostova, A. T. “The isothiocyanate sulforaphane inhibits mTOR in an Nrf2-independent manner” *Phytomedicine*. **2021**, 86, 153062.
9. Gurushingha Arachchige, H. S.; Herath Mudiyanse, P. D. H., VanHeck, G. C.; Patel, K.; Cheaito, H. A.; Dou, Q. P.; **Ahn, Y. H.\*** “Synthesis and Evaluation of Tiaprofenic Acid-derived UCHL5 Deubiquitinase Inhibitors” *Bioorganic Medicinal Chemistry*. **2021**, 30, 115931.
10. Zhang, Y.; VanHecke, G. C.; **Ahn, Y. H.**; Proby, C. M.; Dinkova-Kostova, A. T.\* “Sulfoxythiocarbamate S-4 inhibits HSP90 in human cutaneous squamous cell carcinoma cells” *European Journal of Pharmacology*. **2020**, 889, 173609.
11. VanHecke, G. C.; Yapa Abeywardana, M.; Huang, B.; **Ahn, Y. H.\*** “Isotopically-labelled Clickable Glutathione to Quantify Protein S-Glutathionylation” *ChemBioChem*. **2020**, 21, 853-859.
12. VanHecke, G. C.; Yapa Abeywardana, M.; **Ahn, Y. H.\*** “Proteomic Identification of Protein Glutathionylation in Cardiomyocytes” *Journal of Proteome Research*. **2019**, 18, 1806-1818.
13. Castro, I.; Ekinic, E.; Huang, X.; Cheaito, H. A.; **Ahn, Y. H.**; Olivero-Verbel, J.; Dou, Q. P.\* “Proteasome-associated cysteine deubiquitinases are molecular targets of environmental optical brightener compounds” *Journal of Cellular Biochemistry*. **2019**, 120, 14065-14075.
14. Munkanatta Godage, D. N. P.; VanHecke, G. C.; Samarasinghe, K. T. G.; Holcomb, J.; Yang, Z.; **Ahn, Y. H.\*** “SMYD2 Glutathionylation Contributes to Degradation of Sarcomeric Proteins” *Nature Communications*. **2018**, 9, 4341.
15. Patel, K.; Ahmed, Z. S. O.; Huang, X.; Yang, Q.; Barzegar, E. E.; Neslund-Dudas, C. M.; Mitra, B.; Elnady, F. A. E. M.; **Ahn, Y. H.**; Yang, H.; Liu, J.; Dou, Q. “Discovering proteasomal deubiquitinating enzyme inhibitors for cancer therapy: lessons from rational design, nature and old drug reposition” *Future Medicinal Chemistry*. **2018**, 10, 2087-2108.
16. Kekulandara, D.; Nagi, S.; Seo, H.; Ndombera, F.; Chow, C. S.; **Ahn, Y. H.\*** “Redox-Inactive Peptide Disrupting Trx1-Ask1 Interaction for Selective Activation of Stress Signaling” *Biochemistry*. **2018**, 57, 772-780.

17. Zhao, J.; Liu, J.; Lee, J. F.; Zhang, W.; VanHecke, G. C.; Gartung, A.; Gauldie, J.; **Ahn, Y. H.**; Lee, M. J.\* “Sphingosine-1-phosphate receptor subtype 3 regulates TGF- $\beta$ -mediated Sani1/E-cadherin pathway and lung adenocarcinoma progression” *Journal of Biological Chemistry*. **2016**, *291*, 27343-27353.
18. Kekulandara, D. N.; Samarasinghe, K. T. G.; Munkanatta Godage, D. N. P.; **Ahn, Y. H.**\* “Clickable glutathione using tetrazine-alkene bioorthogonal chemistry for detecting protein glutathionylation” *Organic & Biomolecular Chemistry*. **2016**, *14*, 10886-10893.
19. Samarasinghe, K. T. G.; Munkanatta Godage, D. N. P.; Zhou, Y.; Ndombera, F. T.; Weerapana, E.; **Ahn, Y. H.**\* “Identification of protein glutathionylation in response to glucose metabolism” *Molecular Biosystems*. **2016**, *12*, 2471-2480.
20. Gartung, A.; Zhao, J.; Chen, S.; Mottillo, E.; VanHecke, G. C.; **Ahn, Y. H.**; Maddipati, K. R.; Sorokin, A.; Granneman, J.; Lee, M. J.\* “Characterization of eicosanoids produced by adipocyte lipolysis: implication of cyclooxygenase-2 in adipose inflammation” *Journal of Biological Chemistry*. **2016**, *291*, 16001-16010.
21. Ndombera, F. T.; VanHecke, G. C.; Nagi, S.; **Ahn, Y. H.**\* “Carbohydrate-based Inducers of Cellular Stress for Targeting Cancer Cells” *Bioorganic Medicinal Chemistry Letters*. **2016**, *26*, 1452-1456.
22. Samarasinghe, K. T. G.; **Ahn, Y. H.**\* “Synthesizing Clickable Glutathione by Glutathione Synthetase Mutant for Detecting Protein Glutathionylation” *SynLett*. **2015**, *26*, 285-293.
23. Tu, Shun.; Guo, S. J.; Chen, C. S.; Liu, C. X.; Jiang, H. W.; Ge, F.; Deng, J. Y.; Zhou, Y. M.; Czajkowsky, D.; Li, Y.; Cole, P. A.; **Ahn, Y. H.**; Zhu, H.; Tao, S. C.\* “YcgC Represents a New Protein Deacetylase Family in Prokaryotes” *eLife*, **2015**, *4*, e05322.
24. Wei, S.; Shalhout, S.; **Ahn, Y. H.**; Bhagwat, A. S.\* “A Versatile New Tool to Label Abasic Sites in DNA and Inhibit Base Excision Repair” *DNA Repair*, **2015**, *27*, 9-18.
25. Samarasinghe, K. T. G.; Munkanatta Godage, D. N. P.; VanHecke, G. C.; **Ahn, Y. H.**\* “Metabolic Synthesis of Clickable Glutathione for Chemoselective Detection of Glutathionylation” *Journal of the American Chemical Society*. **2014**, *136*, 11566-11569.
26. Zhang, W.; Mottillo, E. P.; Jawadi, H.; Zhao, J.; Gartung, A.; VanHecke, G. C.; Lee, J. F.; Maddipati, K. R.; Xu, H.; **Ahn, Y. H.**; Proia, R. L.; Granneman, J. G.; Lee, M. J.\* “Adipocyte Lipolysis-stimulated Interleukin-6 Production Regulates Sphingosine Kinase 1 Activity” *Journal of Biological Chemistry*. **2014**, *289*, 32178-32185.
27. Zhang, Y.; Naidu, S. D.; Samarasinghe, K.; VanHecke, G. C.; Pheely, A.; Boronina, T. N.; Cole, R. N.; Benjamin, I. B.; Cole, P. A.; **Ahn, Y. H.**\*; Dinkova-Kostova, A. T.\* “Inhibition of HSP90 by sulfhydryl-reactive sulfoxythiocarbamates.” *British Journal of Cancer*. **2014**, *110*, 71-82

From postdoctoral research at Johns Hopkins University School of Medicine:

28. Chiang, M. J.; Hobert, M. A.; Kalin, J. H.; **Ahn, Y. H.**; Giddens, J.; Amin, M. N.; Taylor, M. S.; Collins, S. L.; Chan-Li, Y.; Waickman, A.; Hsiao, P. Y.; Bolduc, D.; Leahy, D. J.; Horton, M. R.; Wang, L. X.; Powell, J. D.; Cole, P. A.\* “An Fc Domain Protein-Small Molecule Conjugate as an Enhanced Immunomodulator” *Journal of the American Chemical Society*. **2014**, *136*, 3370-3373.
29. Dancy, B. M.; Crump, N. T.; Peterson, D. J.; Mukherjee, C.; Bowers, E. M.; **Ahn, Y. H.**; Yoshida, M.; Zhang, J.; Mahadevan, L. C.; Meyers, D. J.; Boeke, J. D.; Cole, P. A.\* “Live-cell studies of p300/CBP histone acetyltransferase activity and inhibition.” *Chembiochem*. **2012**, *13*, 2113-2121.
30. Zhang, Y.;<sup>†</sup> **Ahn, Y. H.**; <sup>†</sup> Benjamin, I. J.; Honda, T.; Hicks, R. J.; Calabrese, V.; Cole, P. A.; Dinkova-Kostova, A. T.\* “A novel role for sulfhydryl-reactive inducers of the KEAP1/NRF2/ARE pathway: HSF1-dependent upregulation of Hsp70.” *Chemistry & Biology*. **2011**, *18*, 1355-1361. (<sup>†</sup> denote equal contribution)
31. Smirnova, N. A.; Haskew-Layton, R. E.; Manuela, B.; Hushpulian, D. M.; Payappilly, J. B.; Speer, R. E.; **Ahn, Y. H.**; Rakhman, I.; Cole, P. A.; Pinto, J. T.; Ratan, R. R.; Gazaryan, I. G.\* “Development of Neh2-Luciferase reporter and its application for high throughput screening and real-time monitoring of Nrf2 activators.” *Chemistry & Biology*. **2011**, *18*, 752-765

32. Collins, S. L.; Black, K. E.; Chan-Li, Y.; **Ahn, Y. H.**; Cole, P. A.; Powell, J. D.; Horton, M. R.\* “Hyaluronan Fragments promote inflammation by down-regulating the anti-inflammatory A2a receptor.” *American Journal of Respiratory Cell and Molecular Biology*. **2011**, *45*, 675-683
33. **Ahn, Y. H.**; Hwang, Y.; Liu, H.; Wang, X. J.; Zhang, Y.; Stephenson, K. K.; Boronina, T. N.; Cole, R. N.; Dinkova-Kostova, A. T.; Talalay, P.; Cole, P. A.\* “Electrophilic tuning of the chemoprotective natural product sulforaphane.” *Proceedings of the National Academy Sciences of the United States of America*. **2010**, *107*, 9590-9595.

From graduate research at New York University:

34. Lee, J. J.; Lee, S. C.; Zhai, D.; **Ahn, Y. H.**; Yeo, H. Y.; Tan, Y. L.; Chang, Y. T.\* “Bodipy-diacrylate imaging probes for targeted proteins inside live cells.” *Chemical Communications*. **2011**, *47*, 4508-4510
35. Kim, Y. K.; Lee, J. S.; Bi, X.; Ha, H. H.; Ng, S. H.; **Ahn, Y. H.**; Lee, J. J.; Wagner, B. K.; Clemons, P. A.; Chang, Y. T.\* “The binding of fluorophores to proteins depends on the cellular environment.” *Angewandte Chemie International Edition*. **2011**, *50*, 2761-2763.
36. Im, C. N.; Kang, N. Y.; Ha, H. H.; Bi, X.; Lee, J. J.; Park, S. J.; Lee, S. Y.; Vendrell, M.; Kim, Y. K.; Lee, J. S.; Li, J.; **Ahn, Y. H.**; Feng, B.; Ng, H. H.; Yun, S. W.; Chang, Y. T.\* “A fluorescent rosamine compound selectively stains pluripotent stem cells.” *Angewandte Chemie International Edition*. **2010**, *49*, 7497-7500
37. Cho, S. J.; **Ahn, Y. H.**; Maiti, K. K.; Dinish, U. S.; Fu, C. Y.; Thoniyot, P.; Olivo, M.; Chang, Y. T.\* “Combinatorial synthesis of a triphenylmethine library and their application in the development of surface enhanced raman scattering (SERS) probes.” *Chemical Communications*. **2010**, *46*, 722-724
38. Kim, Y. K.; Ha, H. H.; Lee, J. S.; Bi, X.; **Ahn, Y. H.**; Hajar, S.; Lee, J. J.; Chang, Y. T.\* “Control of muscle differentiation by a mitochondria-targeted fluorophore.” *Journal of the American Chemical Society*. **2010**, *132*, 576-579
39. **Ahn, Y. H.**; Lee, J. S.; Chang, Y. T.\* “Selective human serum albumin sensor from the screening of a fluorescent rosamine library.” *Journal of Combinatorial Chemistry*. **2008**, *10*, 376-380.
40. Wagner, B. K.; Carrinski, H.; **Ahn, Y. H.**; Kim, Y. K.; Gilbert, T. J.; Fomina, D.; Schreiber, S. L.; Chang, Y. T.; Clemons, P. A.\* “Small molecule fluorophores to detect cell-state switching in the context of high-throughput screening.” *Journal of the American Chemical Society*. **2008**, *130*, 4208-4209.
41. **Ahn, Y. H.**; Chang, Y. T.\* “Tagged small molecule library approach for facilitated chemical genetics.” *Accounts of Chemical Research*. **2007**, *40*, 1025-1033.
42. Li, Q.; Min, J.; **Ahn, Y. H.**; Namm, J.; Kim, E. M.; Lui, R.; Ji, Y.; Wu, Z. H.; Wisniewski, T.; Chang, Y. T.\* “Styryl-based potential in vivo imaging agents for beta-amyloid plaques.” *Chembiochem* **2007**, *8*, 1679-1687.
43. Min, J.; Lee, J. W.; **Ahn, Y. H.**; Chang, Y. T.\* “Combinatorial synthesis of dapoxyl dyes and application to site specific probe for human serum albumin.” *Journal of Combinatorial Chemistry*. **2007**, *9*, 1079-1083.
44. **Ahn, Y. H.**; Lee, J. S.; Chang, Y. T.\* “Combinatorial rosamine library and application to in vivo glutathione probe.” *Journal of the American Chemical Society*. **2007**, *129*, 4510-4511.
45. Li, Q.; Kim, Y. K.; Namm, J.; Kulkarni, A.; Rosania, G.; **Ahn, Y. H.**; Chang, Y. T.\* “RNA-selective, live cell imaging probes for studying nuclear structure and function.” *Chemistry & Biology*. **2006**, *13*, 615-623.
46. Chi, Y.; Zhou, B.; Wang, W. Q.; Chung, S. K.; Kwon, Y. U.; **Ahn, Y. H.**; Chang, Y. T.; Tsujishita, Y.; Hurley, J. H.; Zhang, Z. Y.\* “Biochemical characterization and substrate specificity of inositol polyphosphate 5-phosphatases synaptojanin and SHIP2.” *Journal of Biological Chemistry*. **2004**, *279*, 44987-44995.

47. **Ahn, Y. H.**; Chang, Y. T.\* “Molecular evolution using intramolecular acyl migration on *myo*-inositol benzoates with thermodynamic and kinetic selectors.” *Chemistry: A European Journal*. **2004**, *10*, 3543-3547.
48. **Ahn, Y. H.**; Chang, Y. T.\* “Molecular evolution on chiro-inositol dibenzoate using intramolecular acyl migration and selection by phenyl boronic acid.” *Journal of Combinatorial Chemistry*. **2004**, *6*, 293-296.

From M.S. and undergraduate research at Pohang University of Science and Technology:

49. **Ahn, Y. H.**; Chung, S. K.\* “A study on the effect of lanthanide ion coordination on the stereoselective synthesis of  $\beta$ -mannopyranosides.” *Bull. Kor. Chem. Soc.* **2003**, *24*, 116-118.
50. **Ahn, Y. H.**; Chung, S. K.\* “A study of benzene 1,2,4-trisphosphate derivatives as inositol 1,4,5-trisphosphate 3-kinase inhibitors.” *Bull. Kor. Chem. Soc.* **2002**, *23*, 515-517.
51. Chung, S. K.\*; Kwon, Y. U.; **Ahn, Y. H.**; Jeong, T. H.; Chang, Y. T. “A novel DAST-induced debenzylative cycloetherization in D-1,2-*O*-isopropylidene-3,4,5-tri-*O*-benzyl-*myo*-inositol.” *Bull. Kor. Chem. Soc.* **2000**, *21*, 274-276.

**Patents**

- I. Chang, Y. T.; Ha, H. H.; Kang, N. Y.; Yun, S. W.; Park, S. J.; **Ahn, Y. H.** “Detection of embryonic stem cells, iPS cells, or cells undergoing reprogramming to produce iPS cells using selective staining by fluorescent probe CDy1” PCT Int. Appl. WO 2012027266, 2012.
- II. Chang, Y. T.; **Ahn, Y. H.**; Kim, Y. K.; Wagner, B.; Carrinski, H. A.; Clemons, P. Schreiber, S. “Preparation of combinatorial rosamine library to detect cell-state switching” U.S. Patent Application # 20090227467, 2009
- III. Chang, Y. T.; **Ahn, Y. H.** “Combinatorial fluorescent rosamine library useful in imaging” U.S. Patent Application # 20080124751, 2008.

**National Meeting and Symposium lectures**

- Ahn, Y. H.** “Integrative Strategy to Uncover Protein Glutathionylation” 263<sup>rd</sup> American Chemical Society National Meeting, Virtual, March 20-24, 2022.
- Ahn, Y. H.** “Chemical Proteomic Approaches to Investigate Protein S-Glutathionylation” Presented at Detroit Cardiovascular Training Program Annual Retreat, Virtual meeting, October 23, 2020. Talk (invited)
- Ahn, Y. H.** “Chemical Approaches to Investigate Protein Glutathionylation” Presented at American Chemical Society Central Regional Meeting, Midland, MI, June 4-7, 2019, Talk (invited).
- Ahn, Y. H.** “Biochemical Approaches to Investigating Protein Glutathionylation” Presented at Gordon Research Conference Bioorganic Chemistry, Andover, NH, June 10-15, 2018, Poster.
- Ahn, Y. H.** “Role of Protein Glutathionylation in Muscle” Presented at 254<sup>st</sup> American Chemical Society National Meeting, Washington DC, August 20-24, 2017, Talk.
- Ahn, Y. H.** “Chemical Method to Characterize Protein Glutathionylation in Stress” Presented at Gordon Research Conference Enzyme, Coenzymes & Metabolic Pathways, Waterville Valley, NH, July 16-21, 2017. Talk (invited).
- Ahn, Y. H.** “Investigating Protein Glutathionylation in Myocytes” Presented at Gordon Research Conference Bioorganic Chemistry, Andover, NH, June 11-16, 2017. Poster.
- Ahn, Y. H.** “Chemoselective detection of protein S-glutathionylation” Presented at 251<sup>st</sup> American Chemical Society National Meeting, San Diego, CA, March 13-17, 2016, Talk (invited).
- Samarasinghe, K. T. G.; Munkanatta Godage, D. N. P.; Zhou, Y.; Ndombera, F. T.; Weerapana, E.; **Ahn, Y. H.** “Identification of protein glutathionylation in response to glucose metabolism” Presented at Gordon Research Conference Bioorganic Chemistry, Andover, NH, June 5-10, 2016. Poster.
- Samarasinghe, K. T. G.; Munkanatta Godage, D. N. P.; Zhou, Y.; Ndombera, F. T.; Weerapana, E.; **Ahn, Y. H.** “Identification of protein glutathionylation in response to glucose metabolism” Presented at

*Gordon Research Conference Thiol-based Redox Regulation, Stowe, VT, August 7-12, 2016. Poster.*

11. Samarasinghe, K. T. G.; Munkanatta Godage, D. N. P.; VanHecke, G. C.; **Ahn, Y. H.** “Metabolic Synthesis of Clickable Glutathione for Chemoselective Detection of Glutathionylation” *Presented at Gordon Research Conference Bioorganic Chemistry, Andover, NH, June 7-13, 2014. Poster.*
12. Samarasinghe, K. T. G.; Munkanatta Godage, D. N. P.; VanHecke, G. C.; **Ahn, Y. H.** “Metabolic Synthesis of Clickable Glutathione for Chemoselective Detection of Glutathionylation” *Presented at Gordon Research Conference Enzyme, Coenzymes & Metabolic Pathways, Waterville Valley, NH, July 13-18, 2014. Poster.*
13. **Ahn, Y. H.**; Hwang, Y.; Hua, L.; Stephenson, K. K.; Talalay, P.; Cole, P. A. “A novel class of sulfoxythiocarbamate sulforaphane analogs for chemoprevention.” *Presented at the 238<sup>th</sup> ACS National Meeting, Washington, DC, August 16-20, 2009. Poster.*
14. Chung, S. K.; Kwon, Y. U.; Lee, C. G.; Shin, B. G.; **Ahn, Y. H.** “Divergent synthesis of all possible optically active regioisomers of myo-inositol tetrakisphosphate.” *Presented at the 220<sup>th</sup> ACS National Meeting, Washington, DC, August 20-24, 2000. Poster.*

### **Invited Departmental Research Seminars**

1. Department of Chemistry, Saint Joseph University, November 1, 2023.
2. Department of Chemistry and Biochemistry, University of Detroit Mercy, April 14, 2023 (3rd Annual Dr. Schlick Memorial Lecture)
3. Department of Chemistry, Drexel University, December 9, 2021.
4. Department of Chemistry, Western Michigan University, February 1, 2021.
5. Department of Chemistry and Biochemistry, California State University Los Angeles, October 29, 2019
6. Department of Chemistry, California State University Long Beach, October 30, 2019.
7. Department of Chemistry, Western Illinois University, October 26, 2018.
8. Cardiovascular Research Institute, Wayne State University, May 14, 2018.
9. Department of Chemistry, Ohio University, March 19, 2018.
10. Department of Chemistry, University of Sciences, January 22, 2018.
11. Department of Pharmacology and Molecular Science, Johns Hopkins University School of Medicine, May 3, 2017.
12. Department of Chemistry, Wayne State University, April 17, 2017
13. Department of Chemistry, New York University, April 11, 2017.
14. Department of Chemistry and Chemical Biology, University of New Mexico, March 23, 2017.
15. Department of Pharmacology and Toxicology, University of Arizona College of Pharmacy, March 21, 2017.
16. Department of Medicinal Chemistry, Virginia Commonwealth University School of Pharmacy, February 22, 2017.
17. Department of Chemistry, Boston College, January 31, 2017.
18. Department of Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School, January 30, 2017.
19. Department of Chemistry and Biochemistry, University of Arkansas, November 28, 2016.
20. Department of Chemistry, Binghamton University, September 9, 2016.
21. Department of Biochemistry and Molecular Biology, Wayne State University, April 5, 2016.
22. Department of Medicinal and biological chemistry, University of Toledo, March 24, 2016.
23. Department of Chemistry, University of Cincinnati, April 10, 2015.
24. Diabetes and Obesity Team Science, Wayne State University, Feb 17, 2015.
25. Department of Chemistry, Central Michigan University, November 17, 2014.
26. Future Convergence Research Division, Biomolecules Function Research Center, Korea Institute of Science & Technology, Korea, June 26, 2012.
27. Department of Chemistry, Pohang University of Science and Technology, Korea, June 25, 2012.
28. Department of Chemistry, National University of Singapore, Singapore, June 21, 2012.
29. Gene Expression and Regulation Program, Wistar Institute, January 5, 2012.

30. Department of Chemistry, Wayne State University, November 28, 2011.
31. Department of Cell and Molecular Pharmacology, Medical University of South Carolina, November 21, 2011.
32. Department of Biochemistry and Molecular Biophysics, Washington University in St. Louis School of Medicine, March 21, 2011.
33. Department of Chemistry, SUNY Binghamton University, January 20, 2011.
34. Chemical Biology Laboratory, National Cancer Institute, November 8, 2010.

## Teaching

### Wayne State University

Fall 2012-	Chemistry 5999, Senior Research In Chemistry
Fall 2018-	Chemistry 5998, Honors Thesis Research in Chemistry
Fall 2012-2017	Chemistry 6620 & 7620, Metabolism: Pathways and Regulations
Winter 2013-2020	Chemistry 5600, Survey of Biochemistry
	Chemistry 7600, Structure and Function of Biomolecules
Winter 2016-2017	Chemistry 1030, Survey of Organic and Biochemistry
Fall 2016	Chemistry 6270 & 7270, Advanced Bioorganic Chemistry and Drug Design
Fall 2018-2020	Chemistry 6610, Biochemistry Laboratory
Fall & Winter 2020	Chemistry 8840, Biochemistry Seminar
Winter 2021-2022	Chemistry 6635 & 7635, Tools of Molecular Biology
Fall 2021	Chemistry 1060, General, Organic & Biochemistry

### Drexel University

Fall 2022-present	Chemistry 493, Senior Research Project in Chemistry
Fall 2022- present	Chemistry 997, Research Graduate Student
Fall 2022	UNIV 101, The Drexel Experience (guest lecture for Chemical Biology)
Winter 2023	Chemistry T380, Chemical Reactions and Enzymes in Metabolism

## Mentored Training

### Graduate Students

1. Kusal T. G. Samarasinghe: Ph.D. (Biochemistry, 2012-2017)  
Rumble Fellow 2013-2014, Knoeller Fellow 2015-2016
2. Dilini Kekulandara: Ph.D. (Biochemistry, 2012-2018)
3. Fidelis Ndombera Ph.D. (Biochemistry, 2012-2018)
4. Dhanushka N. P. Munkanatta Godage Ph.D. (Biochemistry, 2013-2018),  
Rumble Fellow 2016-2017 & 2017-2018
5. Sewvandi Gurusingha Arachchige Ph.D. (Biochemistry, 2015-2021)
6. Adeleye Adewale Ph.D. (Biochemistry, 2016-2022)  
Rumble Fellow 2019-2020
7. Maheeshi Yapa Abeywardana Ph.D. (Biochemistry, 2016-2022)  
CGRA fellowship 2019-2020, Rumble Fellow 2020-2021
8. Dhanushika Kukulage Ph.D. (Biochemistry, 2017-2022)  
Rumble Fellow 2021-2022
9. Iftekher Mahmud M.S. (Biochemistry, 2017-2019)
10. Nadee Matarage Don Ph.D. (Biochemistry, 2018-present)
11. Poornima Herath Mudiyansele Ph.D. (Biochemistry, 2018-present)  
Rumble Fellow 2022-2023
12. Daniel Oppong Ph.D. (Biochemistry, 2019-present)
13. Faezeh Mashhadi Ramezani Ph.D. (Biochemistry, 2023-present)

### Postdoctoral Fellow

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|-------------------------------|--|
| 1. Susan Dagher               | Ph.D. Michigan State University, 2014-2015                 |
| 2. Bo Huang                   | Ph.D. University of Chinese Academy of Sciences, 2018-2021 |
| 3. William Schiff             | Ph.D. Brandeis University, 2022-present                    |
| 4. Madhu Chakkere Shivamadhur | Ph.D. University of Mysore, 2022-present                   |

#### Visiting Scholar

- |                  |   |
|------------------|---|
| 1. Patience Ogbu | Ph.D. University of Nigeria, 2023-present |
|------------------|---|

#### Undergraduates

- |                        |  |
|------------------------|--|
| 2. Matt Hilton         | WSU, Biochemistry, Fall 2012–Winter 2013               |
| 3. Chris Smith         | WSU, Chemistry, Fall 2012-Winter 2013                  |
| 4. Garrett C. VanHecke | WSU, Chemistry, Fall 2012-Winter 2015, UROP Award 2014 |
| 5. Ivan Pavlinov       | WSU, Chemistry, Fall 2012-2015                         |
| 6. Shima Nagi          | WSU, Biochemistry, Winter 2014-2018                    |
| 7. Mawadah Samad       | WSU, Biochemistry, Fall 2014-Summer 2016               |
| 8. Abraham El-Gothamy  | WSU, Biochemistry, Winter 2015-Winter 2016             |
| 9. Fadi Charif         | WSU, Biochemistry, Winter 2015-Winter 2016             |
| 10. Justin Macks       | WSU, Chemistry, Winter 2015-Summer 2016                |
| 11. Adam Schlichther   | WSU, Chemistry, Fall 2015-2019                         |
| 12. Nirmeen Chouaib    | WSU, Biochemistry, Winter 2016-2018                    |
| 13. Mohammad Alzamami  | WSU, Biochemistry, Winter 2016-Winter 2017             |
| 14. Dhruvil Patel      | WSU, Biochemistry, Summer 2016-2019                    |
| 15. Ahmed Ayantayo     | WSU, Chemistry, Summer 2016-2019                       |
| 16. Urvashi Thongam    | WSU, Biochemistry, Winter 2017-2018                    |
| 17. Karam Razooq       | WSU, Biochemistry, Fall 2018-2020                      |
| 18. Batoul Ayad        | WSU, Biochemistry, Fall 2019-2020                      |
| 19. Huy Nguyen         | WSU, Biochemistry, Fall 2019-2021                      |
| 20. Bilal Kawsara      | WSU, Biochemistry, Winter 2017-2021                    |
| 21. Livia Philip       | WSU, Chemistry, Fall 2020-2022, UROP Award 2021        |
| 22. Rami Razooq        | WSU, Biochemistry, Summer 2021-2022                    |
| 23. Mareim Abdullah    | WSU, Biochemistry, Fall 2021-2022                      |
| 24. Samuel Hawk        | Drexel, Chemistry, Fall 2022-2023                      |
| 25. Talan Khasro       | Drexel, Chemistry, Summer 2023-present                 |

#### High School Student

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|--------------------------|--|
| 1. Giulio Vario          | Utica High School Math, Science, Technology, Summer 2016 |
| 2. Joseph Sanna          | Utica High School Math, Science, Technology, Summer 2016 |
| 3. Allister Ho           | Utica High School Math, Science, Technology, Summer 2017 |
| 4. Brendan Klemens       | Utica High School Math, Science, Technology, Summer 2017 |
| 5. Praveen Soundararajan | Utica High School Math, Science, Technology, Summer 2017 |
| 6. Hiral Palakurty       | Garnet Valley High School, Summer 2023                   |

#### **Professional Service**

Editorial Board Member of Nature Journals: Scientific Reports, 2016-2021

Editorial Board Member of Journal of Biological Chemistry, 2023-present

Reviewer of scientific papers for journals (over 20 per year), including:

ACS Chemical Neuroscience, ACS Chemical Biology, Current Opinion in Chemical Biology, Cell Chemical Biology, ACS Central Science, Biochemistry, ChemBioChem, Journal of Biological Chemistry, Scientific Reports, Chemical Society Review, Account Chemical Research, Angewandte Chem., Int. Ed., Bioorganic Medicinal Chemistry Letter, Frontiers in Oncology, Experimental Cell Research, ACS Agricultural and Food Chemistry, ACS Applied Materials and Interface, ACS Omega, Combinatorial

Chemistry & High Throughput Screening. Plos One., Redox Biology, Cancer Research, Chemical Research in Toxicology, Archives of Pharmacal Research, Inorganic Chemistry, Rapid Communication in Mass Spectrometry, Biological Chemistry, Journal of Asian Chemistry.

Proposal reviewer: The National Science Foundation (ad hoc 2015)  
The National Institute of Health BCMB (ad hoc 2019-2023)  
The National Institute of Health DP2 (ad hoc 2023)

### **Service and Committee at Wayne State University and Drexel**

2012-2022 WSU, Member of 24 doctoral, 1 master, and 12 baccalaureate honor committees within the Chemistry Department, and 2 doctoral committee within Department of Biochemistry, School of Medicine, and Department of Biological Sciences.

2012-2016 WSU, Member of the Chemistry Department's Website Committee:

2014-2016 WSU, Graduate Student Recruiting Committee Member in Biochemistry Division recruiting.

2016-2018 WSU, Graduate Student Admission Committee Member in Biochemistry Division recruiting.

2015-2020 WSU, Graduate Student Research Day Judge

2016-2020 WSU, Graduate and Postdoc Research Symposium Reviewer

2017 WSU, Member of Chemistry Department Faculty Search Committee

2017 WSU, CLAS Teaching Award Committee Member

2018 WSU, Master's degree Committee Member

2018 WSU, UROP-Barber Undergraduate Research Award Committee Member

2018-2022 WSU, Graduate Study Committee Member

2019 WSU, CLAS University Research Grant Committee Member

2019-2020 WSU, Chemistry Department Undergraduate Research Advising

2020-2022 WSU, Chemistry Department Faculty Award Committee

2020-2022 WSU, Chemistry Department Biochemistry Division Head

2022-present Drexel, Member of 4 doctoral committees within the Chemistry Department

2022-present Drexel, Member of Graduate Program Committee

2023-present Drexel, Member of Diversity, Equity, and Inclusion (DEI) committee

2023-present Drexel, Member of Curriculum Committee

### **Research Support**

#### Current grants

NIH 1R01 GM143214 (Ahn) 09/1/2021 – 08/31/2025

NIH/NIGMS

Role: PI

Title: Chemical Proteomic Strategy to Investigate Cysteine Glutathionylation

Goals: The major goal of this project is to identify and study protein glutathionylated cysteines regulating cell migration.

NIH 5R01 HL141740 (Ahn) 08/15/2017 – 06/31/2024 (NCE)

NIH/NHLBI

Role: PI

Title: Chemical Methods for Dissecting Protein Glutathionylation in Sarcomere

Goals: The major goal of this project is to identify and characterize protein glutathionylation in regulating sarcomere stability in response to oxidative stress.

#### Completed grants

NIH 5R01 NS101967 (Thomas) 05/01/2020 – 04/30/2022

NIH/NINDS

Role: Co-Investigator

Title: Role of Bach1-mediated transcriptional regulation in neuroprotection.

The goal of this project is to validate Bach1 inhibition as a novel therapeutic target for Parkinson's disease using valid preclinical mouse models

NIH 1R21 CA216650 (Lee)

04/01/2017 – 03/31/2019

NIH/NCI

Role: Co-Investigator

Title: Novel Therapeutic Target of K-RAS Mutation-Induced Non-small Cell Lung Carcinoma

The goals of this project are to determine the role of sphingosine-1-phosphate receptor 3 in the KRAS-mediated Non-small Cell Lung Carcinomas.