

ZARKO V. BOSKOVIC, PhD

1 CONTACT

| | |
|---------|---|
| e-mail | zarko@ku.edu |
| website | https://boskoviclab.ku.edu/ |
| phone | +1(805) 284-3599 |
| | Gray-Little Hall |
| | Lab: 2199; Office: 2192 |
| address | UNIVERSITY OF KANSAS |
| | 1567 Irving Hill Road |
| | Lawrence, 66045 KS |

2 EMPLOYMENT

| | | |
|-------------|-------------------------|---|
| 2024 – now | Courtesy Faculty | KU DEPARTMENT OF CHEMISTRY |
| 2020 – now | Affiliate Faculty | KU CENTER FOR COMPUTATIONAL BIOLOGY |
| 2018 – now | Assistant Professor | KU DEPARTMENT OF MEDICINAL CHEMISTRY |
| 2011– 2017 | Postdoctoral Researcher | THE BROAD INSTITUTE OF MIT AND HARVARD |
| 2006 – 2011 | Research Assistant | UNIVERSITY OF CALIFORNIA, SANTA BARBARA |
| 2004 – 2006 | Researcher | UNIVERSITY OF NIŠ |

3 EDUCATION

| | | |
|-------------|--------------|---|
| 2011 – 2017 | Postdoctoral | THE BROAD INSTITUTE OF MIT AND HARVARD |
| 2006 – 2011 | PhD | UNIVERSITY OF CALIFORNIA, SANTA BARBARA |
| 2001 – 2004 | BSc | UNIVERSITY OF NIŠ, SERBIA |

4 PUBLICATIONS

- [1] M. B. Garcia, M. Singh, E. Miller, S. Neuenswander, J. Douglas, and Z. Boskovic. Twisted Intramolecular Charge-Transfer State Addition to Electron-Poor Olefins. *The Journal of Organic Chemistry*, Feb. 2024, <https://doi.org/10.1021/acs.joc.3c02521>.
- [2] M. Singh, P. Dhote, D. R. Johnson, S. Figueroa-Lazú, C. G. Elles, and Z. Boskovic. Photochemical decarbonylation of oxetanone and azetidinone: Spectroscopy, computational models, and synthetic applications. *Angewandte Chemie International Edition*, 62(3):e202215856, 2023, doi.org/10.1002/anie.202215856.
- [3] Z. Tang, J. Zhao, Z. J. Pearson, Z. V. Boskovic, and J. Wang. Rna-targeting splicing modifiers: Drug development and screening assays. *Molecules*, 26(8):2263, 2021, doi.org/10.3390/molecules26082263.
- [4] M. Singh, B. Gaskins, D. R. Johnson, C. G. Elles, and Z. Boskovic. Synthesis of cycloheptatriene-containing azetidine lactones. *The Journal of Organic Chemistry*, 87(22):15001–15010, 2021, doi.org/10.1021/acs.joc.2c00367.
- [5] S. Kolluru, M. Singh, B. Gaskins, and Z. Boskovic. Nickel-catalyzed annulations of ortho-haloarylimines. *ACS Catalysis*, 11(16):10351–10361, 2021, <https://doi.org/10.1021/acscatal.1c03092>.

- [6] M. Singh, N. Garza, Z. Pearson, J. Douglas, and Z. Boskovic. Broad assessment of bioactivity of a collection of spiroindane pyrrolidines through “cell painting”. *Bioorganic & Medicinal Chemistry*, 28(13):115547, 2020, doi.org/10.1016/j.bmc.2020.115547.
- [7] S. H. Shin, J. S. Lee, J.-M. Zhang, S. Choi, Z. V. Boskovic, R. Zhao, M. Song, R. Wang, J. Tian, M.-H. Lee, et al. Synthetic lethality by targeting the ruvbl1/2-ttt complex in mtorc1-hyperactive cancer cells. *Science Advances*, 6(31):eaay9131, 2020, doi.org/10.1126/sciadv.aay9131.
- [8] Z. Pearson, M. Singh, and Z. Boskovic. Compound collections at ku 1947-2017: Cheminformatic analysis and computational protein target prediction. *Medicinal Chemistry Research*, 29:1211–1222, 4 2020, doi.org/10.1007/s00044-020-02571-y.
- [9] K. Kyei-Baffour, D. C. Davis, Z. Boskovic, N. Kato, and M. Dai. Natural product-inspired aryl isonitriles as a new class of antimalarial compounds against drug-resistant parasites. *Bioorganic & Medicinal Chemistry*, 28(19):115678, 2020, doi.org/10.1016/j.bmc.2020.115678.
- [10] N. Akporji, J. Lieberman, M. Maser, M. Yoshimura, Z. Boskovic, and B. H. Lipshutz. Selective deprotection of the diphenylmethylsilyl (dpms) hydroxyl protecting group under environmentally responsible, aqueous conditions. *ChemCatChem*, 11(23):5743–5747, 2019, doi.org/10.1002/cctc.201901232.
- [11] V. S. Viswanathan, M. J. Ryan, H. D. Dhruv, S. Gill, O. M. Eichhoff, B. Seashore-Ludlow, S. D. Kaffenberger, J. K. Eaton, K. Shimada, A. J. Aguirre, S. R. Viswanathan, S. Chattopadhyay, P. Tamayo, W. S. Yang, M. G. Rees, S. Chen, Z. V. Boskovic, S. Javaid, C. Huang, X. Wu, Y.-Y. Tseng, E. M. Roider, D. Gao, J. M. Cleary, B. M. Wolpin, J. P. Mesirov, D. A. Haber, J. A. Engelman, J. S. Boehm, J. D. Kotz, C. S. Hon, Y. Chen, W. C. Hahn, M. P. Levesque, J. G. Doench, M. E. Berens, A. F. Shamji, P. A. Clemons, B. R. Stockwell, and S. L. Schreiber. Dependency of a therapy-resistant state of cancer cells on a lipid peroxidase pathway. *Nature*, 547(7664):453–457, jul 2017, doi.org/10.1038/nature23007.
- [12] R. T. H. Linstadt, C. A. Peterson, C. I. Jette, Z. V. Boskovic, and B. H. Lipshutz. Control of Chemo-, Regio-, and Enantioselectivity in Copper Hydride Reductions of Morita–Baylis–Hillman Adducts. *Organic Letters*, 19(2):328–331, jan 2017, doi.org/10.1021/acs.orglett.6b03464.
- [13] S. Haftchenary, S. Nelson, L. Furst, S. Dandapani, S. Ferrara, Z. Bošković, S. Figueroa Lazú, A. Guerrero, J. Serrano, D. Crews, C. Brackeen, J. Mowat, T. Brumby, M. Bauser, S. Schreiber, and A. Phillips. Efficient Routes to a Diverse Array of Amino Alcohol-Derived Chiral Fragments. *ACS Combinatorial Science*, 18(9), 2016, doi.org/10.1021/acscmbosci.6b00050.
- [14] C. J. Gerry, B. K. Hua, M. J. Wawer, J. P. Knowles, S. D. Nelson Jr., O. Verho, S. Dandapani, B. K. Wagner, P. A. Clemons, K. I. Booker-Milburn, Z. V. Boskovic, and S. L. Schreiber. Real-Time Biological Annotation of Synthetic Compounds. *Journal of the American Chemical Society*, 138(28):8920–8927, jul 2016, doi.org/10.1021/jacs.6b04614.
- [15] Z. V. Boskovic, M. M. Kemp, A. M. Freedy, V. S. Viswanathan, M. S. Pop, J. H. Fuller, N. M. Martinez, S. O. Figueroa Lazú, J. A. Hong, T. A.

- Lewis, D. Calarese, J. D. Love, A. Vetere, S. C. Almo, S. L. Schreiber, and A. N. Koehler. Inhibition of Zinc-Dependent Histone Deacetylases with a Chemically Triggered Electrophile. *ACS Chemical Biology*, 11(7):1844–1851, jul 2016, doi.org/10.1021/acscchembio.6b00012.
- [16] Z. Zhang, Z. Boskovic, M. Hussain, W. Hu, C. Inouye, H.-J. Kim, A. Katherine Abole, M. Doud, T. Lewis, A. Koehler, S. Schreiber, and R. Tjian. Chemical perturbation of an intrinsically disordered region of TFIID distinguishes two modes of transcription initiation. *eLife*, 4(AUGUST2015), 2015, doi.org/10.7554/eLife.07777.
- [17] D. Adams, M. Dai, S. Schreiber, M. M. Hussain, and Z. Boskovic. Compounds, compositions, and methods for cancer therapy, aug 2015.
- [18] Y. Yuan, K. Hartland, Z. Boskovic, Y. Wang, D. Walpita, P. A. Lysy, C. Zhong, D. W. Young, Y.-k. Kim, N. J. Tolliday, E. M. Sokal, S. L. Schreiber, and B. K. Wagner. A Small-Molecule Inducer of PDX1 Expression Identified by High-Throughput Screening. *Chemistry & Biology*, 20(12):1513–1522, dec 2013, doi.org/10.1016/j.chembiol.2013.10.013.
- [19] B. H. Lipshutz, Z. Bošković, C. S. Crowe, V. K. Davis, H. C. Whittemore, D. A. Vosburg, and A. G. Wenzel. "Click" and olefin metathesis chemistry in water at room temperature enabled by biodegradable micelles. *Journal of Chemical Education*, 90(11):1514–1517, 2013, doi.org/10.1021/ed300893u.
- [20] Z. V. Boskovic, M. M. Hussain, D. J. Adams, M. Dai, and S. L. Schreiber. Synthesis of piperlogs and analysis of their effects on cells. *Tetrahedron*, 69(36):7559–7567, sep 2013, doi.org/10.1016/j.tet.2013.05.080.
- [21] D. J. Adams, Z. V. Boskovic, J. R. Theriault, A. J. Wang, A. M. Stern, B. K. Wagner, A. F. Shamji, and S. L. Schreiber. Discovery of small-molecule enhancers of reactive oxygen species that are nontoxic or cause genotype-selective cell death. *ACS chemical biology*, 8(5):923–9, 2013, doi.org/10.1021/cb300653v.
- [22] Ž. V. Bošković. A. *Advances in Copper Hydride-Catalyzed Reactions* B. *Bimetallic Heterogeneous Catalysis* C. *Tandem Olefin Metathesis/Elimination*. PhD thesis, University of California, Santa Barbara, 2011.
- [23] R. Moser, Z. V. Bosković, C. S. Crowe, and B. H. Lipshutz. CuH-catalyzed enantioselective 1,2-reductions of α,β -unsaturated ketones. *Journal of the American Chemical Society*, 132(23):7852–3, 2010, doi.org/10.1021/ja102689e.
- [24] B. H. Lipshutz and Ž. V. Bošković. 1,2-Bis(diphenylphosphino)benzenecopper Hydride [(BDP)CuH]. In *Encyclopedia of Reagents for Organic Synthesis*. John Wiley & Sons, Ltd, Chichester, UK, oct 2010, doi.org/10.1002/047084289X.rn01207.
- [25] B. H. Lipshutz, A. R. Abela, Ž. V. Bošković, T. Nishikata, C. Duplais, and A. Krasovskiy. "Greening up" cross-coupling chemistry. *Topics in Catalysis*, 53(15-18):985–990, 2010, doi.org/10.1007/s11244-010-9537-1.

- [26] B. H. Lipshutz, D. M. Nihan, E. Vinogradova, B. R. Taft, and Z. V. Bosković. Copper + nickel-in-charcoal (Cu-Ni/C): a bimetallic, heterogeneous catalyst for cross-couplings. *Organic letters*, 10(19):4279–82, 2008, doi.org/10.1021/ol801676u.
- [27] B. H. Lipshutz, S. Ghorai, and Ž. V. Bošković. Tandem olefin metathesis-elimination reactions. A new route to doubly unsaturated carbonyl derivatives. *Tetrahedron*, 64(29):6949–6954, 2008, doi.org/10.1016/j.tet.2008.04.027.
- [28] B. H. Lipshutz, Z. V. Boskovic, and D. H. Aue. Synthesis of Activated Alkenylboronates from Acetylenic Esters by CuH-Catalyzed 1,2-Addition/Transmetalation. *Angewandte Chemie International Edition*, 47(52):10183–10186, 2008, doi.org/10.1002/ANIE.200804912.
- [29] B. A. Baker, Ž. V. Bošković, and B. H. Lipshutz. (BDP)CuH: A “Hot” Stryker’s Reagent for Use in Achiral Conjugate Reductions. *Organic Letters*, 10(2):289–292, jan 2008, doi.org/10.1021/ol702689v.
- [30] I. Gutman, G. Stojanović, Ž. Bošković, N. Radulović, and P. Rašić. Comparing the Randić-Balaban and the Clar models for partitioning of π -electrons in rings of benzenoid hydrocarbons: the case of phenes and starphenes. *Polycyclic Aromatic Compounds*, 25(4):345–355, 2005, doi.org/10.1080/10406630500240794.
- [31] Z. Boskovic, N. Radulovic, and G. Stojanovic. Essential Oil Composition of Four Achillea Species from the Balkans and Its Chemotaxonomic Significance. *Chemistry of Natural Compounds*, 41(6):674–678, nov 2005, doi.org/10.1007/s10600-006-0009-6.
- [32] I. Gutman, B. Furtula, B. Arsić, and Ž. Bošković. On the relation between Zenkevich and Wiener indices of alkanes. *Journal of the Serbian Chemical Society*, 69(4), 2004, doi.org/10.2298/JSC0404265G.

5 FUNDING AND AWARDS

| | | |
|------|--|-----------|
| 2022 | COBRE pilot grant | \$ 75,000 |
| 2021 | COBRE pilot grant | \$ 65,000 |
| 2021 | GMaP | \$ 7,500 |
| 2021 | KU Cancer Center D3ET pilot grant | \$ 25,000 |
| 2020 | NSF XSEDE (computational resources) | in kind |
| 2020 | Chemical Biology of Infectious Diseases COBRE pilot grant | \$60,000 |
| 2020 | Center for Molecular Analysis of Disease Pathways COBRE voucher | \$2,000 |
| 2019 | Protein structure–function COBRE small grant | \$10,000 |
| 2019 | NSF eXtreme Science and Engineering Discovery Environment (XSEDE) | \$1,157 |
| 2019 | Research Study Agreement with ZAFGEN, INC. | \$84,024 |
| 2019 | General Research Fund, KU | \$15,000 |
| 2018 | New Faculty General Research Fund, KU | \$8,000 |
| 2016 | BroadNext10 Scientific Frontiers award | \$40,000 |
| 2011 | HOWARD HUGHES MEDICAL INSTITUTE postdoctoral fellowship | |
| 2010 | Dean's Fellowship, UNIVERSITY OF CALIFORNIA, SANTA BARBARA | |
| 2009 | Sam L. Nguyen Fellowship | \$500 |
| 2006 | Fellowship of the GOVERNMENT OF REPUBLIC OF SERBIA | €15,000 |
| 2005 | Best Student, FACULTY OF SCIENCES AND MATHEMATICS, UNIVERSITY OF NIŠ | |
| 2005 | SERBIAN CHEMICAL SOCIETY Yearly Award | |
| 2004 | ANA BJELETIĆ AND IVAN MARKOVIĆ FOUNDATION AWARD | |
| 2004 | NENAD KOSTIĆ FUND FOR CHEMICAL SCIENCES Award | |

6 SOCIETIES

| | | |
|------------|------------------|---------------------------|
| 2018 – now | Associate member | KU Cancer Center |
| 2010 – now | Member | American Chemical Society |

7 TEACHING

| | | |
|-------------|--------------------------------|----------------------|
| 2019 – | Chemistry of Drug Action I | UNIVERSITY OF KANSAS |
| 2019 – | Medicinal Biochemistry | UNIVERSITY OF KANSAS |
| 2019 | Issues in Scientific Integrity | UNIVERSITY OF KANSAS |
| 2007 – 2010 | Organic Chemistry Lab | UCSB |

8 MENTORING

| | | | |
|-------------|-------------------------|------------------------|----------------------|
| 2023 – now | Victor Fadare | Graduate student | UNIVERSITY OF KANSAS |
| 2023 – now | Elizabeth Miller | Undergraduate student | UNIVERSITY OF KANSAS |
| 2023 – now | Mauricio Bahena Garcia | Masters student | UNIVERSITY OF KANSAS |
| 2022 | Pawan Dhote | Postdoctoral scholar | UNIVERSITY OF KANSAS |
| 2022 – now | Alhamza Hamza | PharmD student | UNIVERSITY OF KANSAS |
| 2021 – 2022 | Ambrosee Wilkinson | Undergraduate student | UNIVERSITY OF KANSAS |
| 2021 | Alyschia Gaffar | PharmD student | UNIVERSITY OF KANSAS |
| 2021 | Koki Takemoto | Graduate student | UNIVERSITY OF KANSAS |
| 2020 – 2021 | Cybelles Arrey | PharmD student | UNIVERSITY OF KANSAS |
| 2020 – now | Bryce Gaskins | Undergraduate student | UNIVERSITY OF KANSAS |
| 2020 – 2021 | Amar Kumar | Graduate student | UNIVERSITY OF KANSAS |
| 2020 – 2021 | Srinivas Kolluru | Postdoctoral scholar | UNIVERSITY OF KANSAS |
| 2019 – 2021 | Vishvah Shah | Undergraduate student | UNIVERSITY OF KANSAS |
| 2019 | Tanner Moore | PharmD student | UNIVERSITY OF KANSAS |
| 2019 – 2021 | Zachary Pearson | Undergraduate student | UNIVERSITY OF KANSAS |
| 2019 | Matthew McCurry | Graduate student | UNIVERSITY OF KANSAS |
| 2018 – 2023 | Manvendra Singh | Graduate student | UNIVERSITY OF KANSAS |
| 2018 – 2020 | Nathan Garza | Research associate | UNIVERSITY OF KANSAS |
| 2016 | Masahiko Yoshimura | Graduate student | NAGOYA UNIVERSITY |
| 2015 – 2017 | Bruce K. Hua | Graduate student | HARVARD |
| 2015 – 2017 | Christopher J. Gerry | Graduate student | HARVARD |
| 2014 | DeMarcus K. Crews | Undergraduate student | MOREHOUSE COLLEGE |
| 2013 – 2015 | Allyson M. Freedy | Undergraduate students | HARVARD |
| 2012 | Samuel O. Figueroa Lazu | Undergraduate student | UPR HUMACAO |
| 2011 | Roscoe Linstadt | Undergraduate student | UCSB |
| 2010 – 2011 | Chris S. Crowe | Undergraduate student | UCSB |

9 PRESENTATIONS

| | | |
|--------------------|---|---|
| April 2, 2024 | Reaching New Chemical "Space" With Excited States | Arena BioWorks, Boston |
| April 1, 2024 | Reaching New Chemical "Space" With Excited States | Boston University |
| March 28, 2024 | Reaching New Chemical "Space" With Excited States | UMass Amherst |
| March 27, 2024 | Reaching New Chemical "Space" With Excited States | CBTS, Broad Institute |
| March 11, 2024 | Excite. Twist. Cleave. | FloHET Conference |
| February 5, 2024 | Reaching New Chemical Space With Excited States | UC Irvine |
| February 2, 2024 | Reaching New Chemical Space With Excited States | UC Riverside |
| January 31, 2024 | Reaching New Chemical Space With Excited States | University of Southern California |
| January 29, 2024 | Reaching New Chemical Space With Excited States | UC Santa Barbara |
| January 26, 2024 | Reaching New Chemical Space With Excited States | San Diego State University |
| November 16, 2023 | ACS Southwest Regional Meeting, Cope Symposium | |
| October 26, 2023 | TBD | Oklahoma State University |
| September 14, 2023 | Choices! Skeletal Photo-isomerization as a Key Tool for the Exploration of New Chemical Space | University of Iowa |
| June 19, 2023 | Photochemical Decarbonylations for the Synthesis of Saturated Heterocycles | Heterocyclic Compounds, Gordon Research Conference, Salve Regina University |
| November 14, 2022 | Non-natural Complex Molecules: Their Synthesis and Effects on Cells | University of Toledo |
| Aug. 21, 2022 | Robust qSAR models from the intersection of new chemical space and cell morphology image space | ACS National Meeting, Chicago |
| Jun. 28, 2022 | Poster: Synthesis of complex structures through the application of photochemistry and transition metal catalysis and their use in bioactivity prospecting | Tetrahedron Symposium, Lisbon Portugal |
| Jun. 20, 2022 | Poster: Synthesis of complex structures through the application of photochemistry and transition metal catalysis and their use in bioactivity prospecting | Heterocyclic Compounds, Gordon Research Conference, Salve Regina University |
| Mar. 24, 2022 | "Non-natural" complex molecules and their biological profiles | ACS National Meeting, San Diego |
| Mar. 9, 2021 | Small molecule binders for SipD protein | Chemical Biology of Infectious Disease COBRE |

| | | |
|---------------|--|--|
| Feb. 24, 2021 | Benzoylation of histones as a novel therapeutic approach for the treatment of multiple myeloma | Rapid Reactor Team PIVOT |
| Feb. 9, 2021 | Linear algebra methods in a chemistry and chemical biology laboratory | Center for Computational Biology seminar series |
| Aug. 27, 2020 | Benzoylated histones: a vulnerability in multiple myeloma | Hematologic Malignancies and Cellular Therapeutics Group Meeting |
| May 27, 2020 | COVID-19 panel | University of Kansas |
| May 18, 2020 | Covalent benzoylation of histones as a molecular vulnerability in multiple myeloma | 2020 Lymphoma/Myeloma DWG Meeting |
| Mar. 21, 2020 | Benzoylated histones: a vulnerability in multiple myeloma | Drug Discovery, Delivery and Experimental Therapeutics research program (D3ET) |
| Aug. 16, 2019 | Metamorphosis of a postdoc: Not another survivor-biased account of perseverance and beating the odds | KU Postdoctoral Association |

10 SERVICE

| | | |
|------------|--|----------------------|
| 2022 – now | NMR Advisory Committee | UNIVERSITY OF KANSAS |
| 2020 – now | ExamSoft Committee | UNIVERSITY OF KANSAS |
| 2020–2022 | X-ray Crystallographer Search Committee | UNIVERSITY OF KANSAS |
| 2020– now | Safety Coordinator, Department of Medicinal Chemistry | UNIVERSITY OF KANSAS |
| 2019–2021 | Admissions Committee, School of Pharmacy | UNIVERSITY OF KANSAS |
| 2018–now | Safety Coordinator, Gray-Little Hall | UNIVERSITY OF KANSAS |
| 2018–2020 | Departmental “ambassador” at the Center for Teaching Excellence | UNIVERSITY OF KANSAS |
| 2018 | Reviewer for Spring 2019 Undergraduate Research Award (UGRA) competition | UNIVERSITY OF KANSAS |

11 JOURNAL REVIEWING ACTIVITY

Journal of the American Chemical Society, Angewandte Chemie International Edition, Journal of Medicinal Chemistry, Chemical Science, Scientific Reports, Tetrahedron Letters, Molecules, ACS Medicinal Chemistry Letters (Editorial Advisory Board Member), Marine Drugs, Bioorganic & Medicinal Chemistry, SLAS Discovery, Journal of Natural Products.

12 GRANT REVIEWING ACTIVITY

American Chemical Society Petroleum Research Foundation, NIH Early Career Reviewer Program, Kansas State University Johnson Cancer Center, NSF SBIR/STTR ad hoc.

April 11, 2024