

ZARKO V. BOSKOVIC, PH.D.

PERSONAL INFORMATION

biographical Born in Serbia, November 27th 1982
US permanent resident

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phone (Cell) +1 (805) 284 3599 · (Lab) +1 (617) 714 7449

WORK EXPERIENCE

Harvard 2011–Present Postdoctoral researcher, THE BROAD INSTITUTE OF HARVARD AND MIT

- Established structure—activity relationships for a number of biologically active small molecules
- Discovered novel modes of covalent small molecule—protein interactions
- Elucidated structure of an inhibitor of transcriptional machinery
- Directed effort on synthesis and rapid annotation of compounds via multiplexed phenotypic assays

References:

Stuart L. SCHREIBER · +1 (617) 714-7080 ·

stuart_schreiber@harvard.edu

Paul A. CLEMONS · +1 (617) 714-7346 ·

pclemons@broadinstitute.org

UCSB 2006–2011 Research Assistant, UNIVERSITY OF CALIFORNIA, SANTA BARBARA

- Developed catalytic, enantio-, regio-, and chemoselective copper hydride-catalyzed reactions.
- Established “green” synthetic methodologies (aqueous micelles, solid-supported catalysts)

References:

Bruce H. LIPSHUTZ · +1 (805) 893-2521 ·

lipshutz@chem.ucsb.edu

Donald H. AUE · +1 (805) 893-2643 · aue@chem.ucsb.edu

University of Niš 2004–2006 Researcher, UNIVERSITY OF NIŠ

- Characterized essential oils and plant extracts by gas chromatography-mass spectrometry and linked the composition to geographic origin of plants.
- Graph theoretical computational analysis of organic molecules

EDUCATION

- 2006-2011 University of California, Santa Barbara
- PhD GPA: 3.97 / 4.00 · *Organic Chemistry*
 Thesis: A. *Advances in Copper Hydride-Catalyzed Reactions* B. *Bimetallic Heterogeneous Catalysis* C. *Tandem Olefin Metathesis/Elimination*.
 Advisor: Prof. Bruce H. LIPSHUTZ
- 2001-2004 University of Niš, Serbia
- BSc GPA: 9.72 / 10.00 · *Chemistry* · School: Faculty of Science and Mathematics

PUBLICATIONS

1. R. Linstadt, C. Peterson, C. Jette, **Z. Boskovic**, B. Lipshutz
 "Control of Chemo-, Regio-, and Enantio-Selectivity in Copper Hydride Reductions of Morita-Baylis-Hillman Adducts",
submitted to Journal of the American Chemical Society
2. **Z. V. Boskovic**, M. Kemp, A. Freedy, V. Viswanathan, M. Pop, J. Fuller, N. Martinez, S. Figueroa Lazú, J. Hong, T. Lewis, D. Calarese, J. Love, A. Vetere, S. Almo, S. L. Schreiber, A. N. Koehler "Inhibition of zinc-dependent histone deacetylases with a chemically triggered electrophile", *ACS Chemical Biology*, **2016**, *11*, 1844–1851
3. C. J. Gerry, B. K. Hua, M. J. Wawer, S. D. Nelson Jr., O. Verho, S. Dandapani, B. K. Wagner, P. A. Clemons, **Z. V. Boskovic**,* S. L. Schreiber* "Synthesis and real-time biological annotation of isomeric small-molecule triads", *Journal of the American Chemical Society*, **2016**, *138*, 8920–8927, * - corresponding authors
4. S. Haftchenary, S. D. Nelson Jr., L. Furst, S. Dandapani, S. Ferrara, **Z. V. Boskovic**, S. Figueroa Lazú, A. Guerrero, J. Serrano, D. Crews, C. Brackeen, J. Mowat, T. Brumby, M. Bauser, S. L. Schreiber, and A. J. Phillips "Efficient Routes to a Diverse Array of Amino Alcohol-Derived Chiral Fragments", *ACS Combinatorial Science*, **2016**, *18*, 569–574.
5. S. Byun, S. G. Kim, K. W. Yoon, S. H. Shin, **Z. V. Boskovic**, J. Li, Y. J. Jang, K. W. Lee, A. Mandinova, J. Blenis, and S. W. Lee "Synthetic lethality by targeting the RUVBL1/2-TTT complex in mTORC1-hyperactive cancer cells", *accepted for publication Nature Communications*
6. Z. Zhang, **Z. Boskovic**, M. Hussain, W. Hu, C. Inouye, H.-J. Kim, A. K. Abole, T. Lewis, L. MacPherson, D. Trauner, A. N.

- Koehler, S. L. Schreiber, R. Tjian "Chemical Perturbation of an Intrinsically Disordered Region of TFIID Distinguishes Two Modes of Transcription Initiation", *eLife* 2015;10.7554/eLife.07777
7. V. Viswanathan, B. Seashore-Ludlow, A. Aguirre, K. Shimada, S. Chattopadhyay, P. Tamayo, W. Yang, M. Rees, J. Cheah, J. Paulk, S. Chen, **Z. Boskovic**, S. Javaid, C. Huang, X. Wu, Y.-Y. Tseng, A. Tsherniak, J. Cleary, B. Wolpin, J. Mesirov, D. Haber, J. Engelman, J. Boehm, J. Kotz, W. Hahn, P. Clemons, A. Shamji, B. Stockwell, S. Schreiber "Dependency of high mesenchymal state cancer cells on a glutathione-selenoprotein pathway", *in revision Nature*
 8. B. H. Lipshutz, **Z. Boskovic**, C. S. Crowe, V. K. Davis, H. C. Whittemore, D. A. Vosburg, A. G. Wenzel "Green "Click" and Olefin Metathesis Chemistry in Water at Room Temperature Enabled by Biodegradable Micelles" *J. Chem. Ed.*, **2013**, *90*, 1514-1517.
 9. Y. Yuan, K. Hartland, **Z. V. 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 "Small molecule-mediated expression of PDX1 causes acquisition of beta cell-like characteristics in a human ductal cancer cell line" *Chemistry and Biology*, **2013**, *20*, 1513-1522.
 10. **Z. V. Boskovic**, M. M. Hussain, D. J. Adams, M. Dai, S. L. Schreiber "Synthesis of piperlogs and analysis of their effects on cells" *Tetrahedron*, **2013**, *69*, 7559-7567. Invited submission for special issue honoring Professor Paul Wender.
 11. 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 "High-throughput screening identifies small-molecule enhancers of reactive oxygen species that are nontoxic or cause genotype-selective cell death" *ACS Chem. Biol.* **2013**, *8*, 923-929.
 12. R. Moser, **Z. V. Boskovic**, C. S. Crowe, B. H. Lipshutz "CuH-Catalyzed Enantioselective 1,2 Reductions of α,β -Unsaturated Ketones" *J. Am. Chem. Soc.* **2010**, *132*, 7852-7853.
 13. B. H. Lipshutz, **Z. V. Boskovic**, D. H. Aue "Synthesis of Activated Alkenylboronates from Acetylenic Esters by CuH-Catalyzed 1,2-Addition/Transmetalation" *Angew. Chem. Int. Ed.* **2008**, *47*, 10183-10186.
 14. B. H. Lipshutz, S. Ghorai, **Z. V. Boskovic** "Tandem olefin metathesis-elimination reactions. A new route to doubly

unsaturated carbonyl derivatives" *Tetrahedron*, **2008**, *64*, 6949–6954.

15. B. H. Lipshutz, D. M. Nihan, E. Vinogradova, B. R. Taft, **Z. V. Boskovic** "Copper + nickel-in-charcoal (Cu-Ni/C): A bimetallic, heterogeneous catalyst for cross-couplings" *Org. Lett.* **2008**, *10*, 4279–4282.
16. B. A. Baker, **Z. V. Boskovic**, B. H. Lipshutz "(BDP)CuH: A Hot Stryker's Reagent for Use in Achiral Conjugate Reductions" *Org. Lett.* **2008**, *10*, 289–292.
17. **Z. Boskovic**, N. Radulovic, G. Stojanovic "Essential Oil Composition of Four Achillea Species from the Balkans and its Chemotaxonomic Significance" *Chem. Nat. Compd.*, **2005**, *41*, 674–678.
18. I. Gutman, G. Stojanovic, **Z. Boskovic**, N. Radulovic, P. Rasic "Comparing the Randic-Balaban and the Clar Models for Partitioning of pi-electrons in Rings of the Benzenoid Hydrocarbons: the Case of Phenenes and Starphenes" *Polycycl. Aromat. Comp.*, **2005**, *25*, 345–355.
19. I. Gutman, B. Furtula, B. Arsic, **Z. Boskovic** "On the Relation between Zenkevich and Wiener Indices of Alkanes" *J. Serb. Chem. Soc.*, **2004**, *69*, 265–271.

REVIEWS & COMMENTARIES

1. M. Dai, **Z. Boskovic** "Ruthenium Complex of N,N,N-Trimethyl-1,4,7-triazacyclononane and Ruthenium Complex of cis-Diaquabis (6,6-Dichloro-2,2-bipyridine) - First update", e-EROS Encyclopedia of Reagents for Organic Synthesis.
2. B. H. Lipshutz, **Z. V. Boskovic** "1,2-Bis(diphenylphosphino)benzenecopper Hydride [(BDP)CuH]" e-EROS Encyclopedia of Reagents for Organic Synthesis.
3. B. H. Lipshutz, A. R. Abela, **Z. V. Boskovic**, T. Nishikata, C. Duplais, A. Krasovskiy "Greening Up Cross-coupling Reactions" *Top. Catal.* **2010**, *53*, 985–990.

PATENTS

1. Compounds, Compositions, and Methods for Cancer Therapy, U.S. Patent No. 9,108,923; Filed: March 13, 2013, Approved: August 18, 2015
2. Compositions and Methods for Treating Multiple Myeloma, U.S. Provisional Patent Application No.: 62/205,382

TEACHING AND MENTORING

Mentor

2016 · Masahiko Yoshimura · Nagoya University

2015 · Bruce K. Hua · Harvard

2015 · Christopher J. Gerry · Harvard

2014 · DeMarcus K. Crews · Morehouse College

2013 · Allyson M. Freedy · Harvard

2012 · Samuel O. Figueroa Lazú · UPR Humacao

2010 · Chris S. Crowe · UC SB

Teaching Assistant

Chemistry 6a · UC SB · Introductory organic chemistry lab

Chemistry 6b · UC SB · Intermediate organic chemistry lab

Chemistry 6c · UC SB · Advanced organic chemistry lab

OTHER INFORMATION

Awards

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

2006 · Fellowship of the Government of Republic of Serbia

2005 · Best Student, Faculty of Sciences and Mathematics, University of Nis, Serbia

2005 · Serbian Chemical Society Yearly Award

2004 · Nenad Kostic Fund for Chemical Sciences Award

Invited Lectures & Posters

2015 · American Chemical Society National Symposium; Two poster presentations

“Does Your Molecule Do Anything”, **Zarko V. Boskovic**, Christopher J. Gerry, Bruce K. Hua, Stuart L. Schreiber
 “Elucidating Mechanism of Action of a Bioactive Small Molecule With the Aid of Isotopic Labeling”, **Zarko V.**

Boskovic, Shrikanta Chattopadhyay, Cherrie Huang,
Stuart L. Schreiber

2013 · Juniata College, "How do you oxidize cells? Use Michael acceptors"

2010 · Graduate Research Symposium, Boston College, "A Shift In Regioselectivity of Copper Hydride Catalyzed Reductions: An Inroad to Chiral Allylic Alcohols"

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