

**Mensur Dlakic – Curriculum Vitae**

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**EDUCATION AND TRAINING**

1987-1991 B.Sc. (Molecular Biology), Belgrade University, Belgrade  
1993-1997 Ph.D. (Biochemistry), University of Nevada, Reno  
1998-2003 Postdoc (Biochemistry & Bioinformatics), University of Michigan, Ann Arbor  
2003 Postdoc (Genetics & Cell Biology), University of Edinburgh, Edinburgh

**POSITIONS AND EMPLOYMENT**

1991-1992 Research Fellow, Belgrade University, Belgrade  
1993-1997 Graduate Research Assistant, Department of Biochemistry, University of Nevada, Reno  
1998-1999 Postdoctoral Research Associate, HHMI, University of Michigan, Ann Arbor  
2000-2003 Special Fellow of the Leukemia & Lymphoma Society, Department of Biological Chemistry, University of Michigan, Ann Arbor  
2003 Senior Research Fellow, Institute of Cell and Molecular Biology, University of Edinburgh  
2004-2010 Assistant Professor, Department of Microbiology, MSU, Bozeman  
2011-present Associate Professor, Department of Microbiology, MSU, Bozeman  
2005-present Member, Thermal Biology Institute, MSU, Bozeman  
2006-present Faculty, Molecular Biosciences Program, MSU, Bozeman  
2007-2013 Faculty, IGERT, MSU, Bozeman  
2008-2013 Advisory Board Member, IGERT, MSU, Bozeman  
2009-2013 Advisory Board Member, Molecular Biosciences Program, MSU, Bozeman

**ACADEMIC HONORS**

1994-1998 Supplementary Grant from the Open Society Institute, New York  
1995 Graduate Student Association Award for Excellence in Scientific Writing  
1996 Graduate Student Association Award for Academic Achievement in Biomedical Sciences  
1999 Postdoctoral Fellowship, University of Michigan. Sponsored by Rackham Interdisciplinary Institute  
1999-2000 Postdoctoral Fellowship, University of Michigan. Sponsored by AACR-Sydney Kimmel Foundation for Cancer Research  
2000-2003 Special Fellowship, University of Michigan. Sponsored by Leukemia & Lymphoma Society

**SCIENTIFIC ACTIVITIES**

1997- Reviewer for Biochemistry, Bioinformatics, Biophysical Journal, BMC Bioinformatics, BMC Structural Biology, FEBS Journal, Frontiers Journals, Genome Research, Journal of Biological Chemistry, Journal of Molecular Biology, Microbial Pathogenesis, Nucleic Acids Research, PNAS, Proteins, Protein Science, RNA

2006-	<i>Ad Hoc</i> NIH Reviewer
2007-	<i>Ad Hoc</i> NSF Reviewer
2009	Mail reviewer for NIH Recovery Act Grants
2021-	<i>Ad Hoc</i> Medical Research Council Reviewer (UK)
2011-	Frontiers in Genetics, section Computational Biology, Associate Editor
2013-	Biology Direct, Editorial Board (Structural and Molecular Biology)
2014-2015	Frontiers in Cellular & Infection Microbiology, Guest Associate Editor
2020-	Frontiers in Bioinformatics, section Protein Bioinformatics, Associate Editor

**MOST RECENT PEER-REVIEWED PUBLICATIONS (LAST ~10 YEARS, A TOTAL OF 52):**

37. Gress, JC, Robertson HM, Weaver DK, Dlakic M, Wanner KW (2013) Odorant Receptors of a Primitive Hymenopteran Pest, the Wheat Stem Sawfly. *Insect Mol. Biol.* 22: 659-667.
38. Shenker BJ, Walker LP, Zekavat A, Dlakic M, Boesze-Battaglia K (2014) Blockade of the PI-3K signaling pathway by the *Aggregatibacter actinomycetemcomitans* cytolethal distending toxin induces macrophages to synthesize and secrete pro-inflammatory cytokines. *Cell Microbiol.* 16: 1391-1404.
39. Boesze-Battaglia K, Walker LP, Zekavat A, Dlakic M, Scuron MD, Nygren P, Shenker BJ (2015) The *Aggregatibacter actinomycetemcomitans* Cytolethal Distending Toxin Active Subunit CdtB Contains a Cholesterol Recognition Sequence Required for Toxin Binding and Subunit Internalization. *Infect. Immun.* 83: 4042-4055.
40. Kleven MD, Dlakic M, Lawrence CM (2015) Characterization of a Single b-type Heme, FAD, and Metal Binding Sites in the Transmembrane Domain of Six-transmembrane Epithelial Antigen of the Prostate (STEAP) Family Proteins. *J. Biol. Chem.* 290: 22558-22569.
41. Boesze-Battaglia K, Walker LP, Zekavat A, Dlakic M, Scuron MD, Nygren P, Shenker BJ (2015) The *Aggregatibacter actinomycetemcomitans* Cytolethal Distending Toxin Active Subunit CdtB Contains a Cholesterol Recognition Sequence Required for Toxin Binding and Subunit Internalization. *Infect. Immun.* 83: 4042-55.
42. Shenker BJ, Boesze-Battaglia K, Scuron MD, Walker LP, Zekavat A, Dlakic M (2016) The toxicity of the *Aggregatibacter actinomycetemcomitans* cytolethal distending toxin correlates with its phosphatidylinositol-3,4,5-triphosphate phosphatase activity. *Cell Microbiol.* 18: 223-43.
43. Boesze-Battaglia K, Alexander D, Dlakic M, Shenker BJ (2016) A Journey of Cytolethal Distending Toxins through Cell Membranes. *Front. Cell Infect. Microbiol.* 6: 81.
44. Scuron MD, Boesze-Battaglia K, Dlakic M, Shenker BJ (2017) The Cytolethal Distending Toxin Contributes to Microbial Virulence and Disease Pathogenesis by Acting As a Tri-Perditious Toxin. *Front. Cell Infect. Microbiol.* 6: 168.
45. Jay ZJ, Beam JP, Dlakic M, Rusch DB, Kozubal MA, Inskeep WP (2018) *Marsarchaeota* are an aerobic archaeal lineage abundant in geothermal iron oxide microbial mats. *Nature Microbiol.* 3: 732-740.
46. McKay LJ, Dlakic M, Fields MW, Delmont TO, Eren AM, Beam JP, Klingel-Smith KB, Rusch DB, Inskeep WP (2019) Co-occurring genomic capacity for anaerobic methane and dissimilatory sulfur metabolisms discovered in the *Korarchaeota*. *Nature Microbiol.* 4: 614-622.
47. Mushegian A, Sorokina I, Eroshkin A, Dlakic M, (2020) An Ancient Evolutionary Connection Between Ribonuclease A and EndoU Families. *RNA* 7: 803-813.



## TEACHING

BIOL 102 Molecular & Cellular Biology, Fall 2005-09  
BIOB 160 Principles of Living Systems, Fall 2010-12; Spring 2014; Fall 2014-2023  
MB 400 Undergraduate Seminar, Spring 2006; Fall 2009  
BIOM 455 Research Methods in Microbiology, Spring 2005-09; Spring 2011, 2013, 2015, 2019  
BIOM 494 Undergraduate Seminar, Fall 2010, Spring-Fall 2011, 2012, 2018-23; Fall 2013-2017  
MB 500 Graduate Seminar, Fall 2004  
MB 544 Advanced Bioinformatics, Spring 2008-12, Spring 2014, 2016, 2018, 2020-2023  
BIOM 491 Trends in Microbiology, Spring 2013-15 (delivered fully online)

### Guest Lecturer:

MB 110CS Introduction to Biotechnology, Fall 2008-11  
DGED 610 Geobiological Systems Science, Fall 2008-11

## MENTORING AND ADVISING

### Graduate Students:

Anupam Goel, 2005-2006, **graduated from Chemistry at MSU**  
Joella Geary, 2006-2008, **graduated**  
Cathy Castle, 2006-2008, **graduated**  
Tatsuya Akiyama, 2013, **graduated**  
Tyson Vervoort, 2013, **graduated from Chemistry at MSU**  
Jacob Robison, 2014-2015, **graduated from Chemistry at MSU**  
Russell Spaan, 2017, **MS student at MSU**

### Undergraduate Students:

Kaitlin Basham, 2007-2009, **PhD U of Utah**  
Kristen Olerup, 2011, **graduated**  
Erika Lacy, 2011-2012, **MS at MSU**  
Katrina Jackson, 2012-2013, **now at NIH**  
Andrew Burchak, 2013, **graduated**  
Eaon Hanebury, 2014, **graduated**  
Britney Gibbs, 2015-2016, **graduated**  
Murat Buyukyoruk, 2015-2016, **now PhD student at MSU**  
Taylor Herzog, 2017-2018, **graduated**  
Claire Zuetell, 2020-2022, **graduated, now MS student at MSU**  
Katrina Rowland, 2022-2022, **sophomore at MSU**  
Heidi Hansch, 2023-, **junior at MSU**

## TRAINING

- DNA, RNA, and protein isolation; PCR, RT-PCR; DNA sequencing and synthesis of standard and modified oligos; Southern, Northern and Western blotting
- Subcloning of natural and synthetic DNA fragments (cloned >100 genes from various species)
- *In vitro* and *in vivo* protein expression and purification; Site-directed mutagenesis
- *In vitro* assays of DNA-protein binding; DNA and RNA binding site selection *in vitro* (SELEX)
- Analysis of protein-DNA interactions using fluorescence resonance energy transfer (FRET)

- Enzymatic and chemical methods of DNA cleavage (DNase I, hydroxyl-radicals, dimethyl sulphate, potassium permanganate); Footprinting protein-DNA complexes
- Protein-mediated DNA circularization and phasing analysis studies of protein-induced DNA bending
- Mammalian cell culture; Fluorescent imaging of proteins and protein complexes; BiFC
- rRNA processing; Yeast genetics
- Imaging of DNA and protein-DNA complexes with Scanning Tunnel and Atomic Force Microscopes
- Large-scale protein and DNA production and purification; Crystallization trials
- Probabilistic models (Hidden Markov Models) of protein families; Automatic machine learning techniques; Secondary structure prediction of proteins
- Iterative profile searches, fold recognition and comparative modeling of proteins
- Genomic search for protein binding sites; Comparative genomics at the level of DNA and proteins
- Computer modeling of DNA structure and macromolecular graphics
- Background in all aspects of computer applications; Administrator for small Unix and Linux systems