MARK GOMELSKY

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https://scholar.google.com/citations?user=EBV-dlEAAAAJ&hl=en

EDUCATION

1988 B.S./M.S. Industrial Microbiology (*Summa cum Laude*). Moscow Institute of Chemical Technology, Moscow, Russia.
1991 Ph.D. Biological Sciences (Microbial Genetics). Institute of Genetics and Selection of Industrial Microorganisms, Moscow, Russia.

PROFESSIONAL RESEARCH EXPERIENCE

1991-92 Junior Research Scientist. State Research Institute of Genetics and Selection of Industrial Microorganisms, Moscow, Russia.
1992 Visiting Scientist. Unit of Regulation of Gene Expression, Institut Pasteur, Paris, France.
1993-99 Postdoctoral Research Fellow. Dept. of Microbiology and Molecular Genetics, University of Texas Medical School, Houston, TX.
1999-present Professor (1999, Assistant; 2005, Associate; 2011, Full). Dept. of Molecular Biology, University of Wyoming, Laramie, WY.
2007 Visiting Professor (sabbatical). Dept. of Biomolecular Mechanisms, Max Planck Institute for Medical Research, Heidelberg, Germany.
2015 Visiting Professor (sabbatical). Dept. of Microbiology, Tumor and Cell Biology, Karolinska Institute, Stockholm, Sweden.

TEACHING EXPERIENCE

2000-06; 2011-present MOLB4460/5460 Microbial Physiology and Metabolism (3 CR)
2016-present MOLB5057 Microbial and Synthetic Biology (2 CR)
2012-13, 2017-present MOLB4050 Student Seminar (1 CR)
2008-10 MOLB3610 Principles of Biochemistry (4 CR)
2003-07 MOLB4490/5490 Microbial Gene Expression Laboratory (1 CR)
2000-06 MOLB4051/5051 Departmental Seminar (1 CR)
2001 MOLB 5660 Transcription, Translation, Replication (1 CR)
2001 MICR 3000 Microbial Diversity & Molecular Phylogeny (3 CR)

AWARDS AND HONORS *(last 10 years)*

2010 The J.B. Wilson Lecture, Distinguished Lectures in Microbiology, Univ. of Wisconsin-Madison.
2012 Intl. Conference on c-di-GMP and *Xanthomonas*. Taichung, Taiwan. Keynote.
2012 Lawrence Meeboer Agricultural Classroom Teaching Award, Univ. Wyoming, nominee.
2012-18 Intl. Symp. on Phototrophic Prokaryotes, Scientific Committee.
2012-13 President, Rocky Mountain Branch of ASM.
2013 Wind River Conference on Prokaryotic Biology, Estes Park, CO. Keynote.
2016 Two papers selected among 120 most influential studies published in *J Bacteriol* in 1916-2015.
2016 Jack Kenney Award for Outstanding Service for *J Bacteriol*.
2017 13th Intl Conference on Tetrapyrrole Photoreceptors of Photosynthetic Organisms. Keynote.
2017 Distinguished Service on the Editorial Board of *Appl Environ Microbiol*.
2017 Elected Fellow of American Association for the Advancement of Science (AAAS).

2018 Excellence in Research Award, UW College of Agriculture and Natural Resources.

FUNDING

Current

- NIH R21 AI135683-01. 01/2018-12/19. Interplay between c-di-GMP signaling, metabolism and virulence in *Listeria monocytogenes*. Gomelsky M, PI.
- USDA NIFA. UW Agricultural Experiment Station. 01/2020-09/20. Detection and prevention of listerial biofilms on fresh produce. Bisha B, PI, Gomelsky M, co-PI.

Pending

- NIH R21 CA238080-01. Remotely controlled listerial bactodrones for cancer immunotherapy. Gomelsky M, Gigley J, MPI.
- NSF IOS 1946224. Listeria-plant biofilms.
- USDA AFRI. Bisha_USDA-NIFA-AFRI-006772. Novel approaches to mitigate listerial biofilms on produce.

Completed

- University of Wyoming Faculty Grant-in-Aid Program. 07/2018-06/19. Innovative cell-based obesity treatment. Gomelsky M, PI; Nair S, co-PI.
- DoD, Congressionally Directed Medical Research Programs. Concept Award RT160150. 10/2017-3/19. Localized immunosuppression via optogenetically controlled regulatory T-cells. Bushman J, PI; Gomelsky M, co-PI.
- USDA NIFA. WYO-583-17. UW Agricultural Experiment Station. 02/2017-09/18. Detection and elimination of listerial exopolysaccharide. Gomelsky M, PI; B. Bisha, co-PI.
- University of Wyoming Cancer Funds Initiative. 07/2017-06/18. Gomelsky M, PI.
- NIH R21AI117198. 1/2015-12/16. Cyclic di-GMP-dependent regulation of metabolism and virulence in *Borrelia burgdorferi*. Yang XF & Gomelsky M, MPI
- NIH P20GM103432 (Wyoming INBRE). 9/2016-5/18. Ph.D. assistantship & tuition. Gomelsky M, PI.
- NIH P20GM103432 (Wyoming INBRE). 03/2016-02/17. NextGen sequencing project. Gomelsky M, PI.
- NIH R21EB018539. 4/2014-9/16. Bacteriophytochrome-based optogenetic tools for mammalian gene regulation. Gomelsky M, PI.
- NIH P20GM103432 (Wyoming INBRE). 9/2014-8/16. Ph.D. assistantship and tuition. Lyuksyutova AI, Gomelsky M, MPI.
- NSF MCB1052575. 3/2011-7/15. Cyclic dimeric GMP, a novel second messenger in bacteria: Molecular mechanisms. Gomelsky M, PI.
- UW New Grant Initiative. 7/2014-6/15. Consortium for developing novel near-infrared light-activated tools for mapping brain circuits. Gomelsky M, Lyuksyutova AI, Sun QQ, MPI.
- NIH R21CA167862. 6/2012-7/14. Near-infrared light activated photoswitches. Gomelsky M, PI.
- NIH P20GM103432 (Wyoming INBRE). 8/2013-7/14 Ph.D. assistantship and tuition. Lyuksyutova AI, Gomelsky M, MPI.
- USDA NIFA. UW Agricultural Experiment Station. 1/2013-7/14. *Listeria monocytogenes* exopolysaccharide: Structure and roles in colonization and persistence on produce surfaces. Miller KW, PI; Gomelsky M, Co-PI.
- UW School of Energy Resources. 8/2012-5/14. Ph.D. assistantship and tuition. Gomelsky M, PI.
- NIH R01 AI025098. 4/2009-3/13. Plague biofilm formation - regulation and function. Perry R, PI; Gomelsky M, subcontract.
- USDA AFRI 2010-65201-20599. 1/2010-12/12. C-di-GMP signaling in colonization of the gastrointestinal tract of beef cattle and virulence gene expression in strain *E. coli* O157:H7. Zhu MJ, PI; Gomelsky M, Co-PI.

- UW Center for Photoconversion and Catalysis, School of Energy Resources. 5/2011-11/12 Isoprene synthesis by the anoxygenic phototrophic bacterium *Rhodobacter sphaeroides*. Gomelsky M, PI.
- USDA NIFA. UW Agricultural Experiment Station. 1/2010-8/12. C-di-GMP signaling in *Escherichia coli* 0157:H7 biofilm formation and gastrointestinal tract colonization of beef cattle. Zhu MJ, PI; Gomelsky M, Co-PI.
- USDA. UW Agricultural Experiment Station. 1/2009-9/11. Metabolic engineering of *Rhodobacter sphaeroides* for sustainable photosynthetic hydrogen production. Gomelsky M, PI.
- NIH P20 RR016474. 7/2009-4/11. J. Ren, PI. Wyoming INBRE Pilot Grant. Engineering red-light activated nucleotide cyclases. Gomelsky M, Investigator.
- NSF MCB0645876. 3/2007-2/11. Cyclic dimeric GMP, a novel second messenger in bacteria: Molecular mechanisms. Gomelsky M, PI.
- USDA CSREES 35318-17445. 9/2006-8/10. Biological functions of antioxidant enzymes associated with oxygenic photosynthesis. Herbert S, PI; Gomelsky M, Co-PI.
- UW School of Energy Resources. 9/2007-8/09. Ph.D. student assistantship and tuition. Sustainable photosynthetic H_2 production. Gomelsky M, PI.
- USDA. UW Agricultural Experiment Station. 1/2007-8/09. Conserved pathway linking cyclic dimeric GMP to *E. coli* motility and virulence. Gomelsky M, PI
- Wyoming NASA Space Grant Consortium. 5/2005-4/08. Ferrous iron oxidation by anoxygenic photosynthetic bacteria and biosignatures of extraterrestrial life. Gomelsky M, PI.
- NSF MCB 0316270. 9/2003-8/06. Cyclic diguanylate, a novel secondary messenger in bacteria. Gomelsky M, PI.
- DoE BER DE-FG02-01ER63232. 9/2001-9/05. Genomes-to-Life Program. The molecular basis for metabolic and energetic diversity. Donohue TJ, PD.
- NIH NCRR P20 RR15640 (COBRE). 9/2000-6/05. Stressors of cardiovascular health. F.W. Flynn, P.D. Project: "Mechanisms of hypoxia sensing - from *Rhodobacter* to humans". Gomelsky M, PI.
- Roche Vitamins, Inc. (Switzerland). 8/2003. *Rhodobacter sphaeroides* DNA microarrays. Gomelsky M, PI.
- UW Global Perspectives and International Travel grants. 2003-15 (9 grants) Gomelsky M, PI.

MENTORSHIP

Postdoctoral research associates

- J. Sram (2001-02). Vice President, Business Development and Sales, Fulgent Genomics, CA.
- M. Tarutina (2001-05). Senior Research Scientist, Ajinomoto-Genetika, Russia.
- O. Moskvin (2002-10). Senior Scientist, Wilmar Inc., Singapore.
- D. Ryjenkov (2006-07). Director, Cell Biology Lab, ChemDiv, Russia.
- J. Siltberg-Liberles (2008-09). Assoc. Prof., Florida International Univ.
- Z.T. Guvener (2010-11). Senior Scientist, Caribu Biosciences.
- L. Chen (2010-11). Assoc. Professor, Inner-Mongolian Agricultural Univ., China.
- G. Qian (2015-16). Professor, Nanjing Agricultural Univ., China
- A. Elbakush (2018-present)

Graduate students

- Major advisor

Ph.D. (completed):

- D.A. Ryjenkov (2001-06): Best poster (2003), best talk (2005) at the UWyo Graduate School Symposia; Runner-up – oral presentation at the Rocky Mountain Branch of ASM Meeting (2004); ASM travel grant (2005); R&D Director, Mabscale Biotech, Russia.
- M.H. Ryu (2007-13): 2nd place in poster competition at the Rocky Mountain Branch of ASM Meeting (2009; 2011); best graduate presentation at the Rocky Mountain Branch of ASM Meeting (2013); ASM travel grants (2010, '13). Senior Scientist at Pivot Bio, MA.

- X. Fang (2006-14): best poster at the Rocky Mountain Branch of ASM Meeting (2009), 2nd place in poster competition at the Rocky Mountain Branch of ASM Meeting (2011), ASM travel grant (2011); 2nd place in oral presentation (2013), postdoc at Emory Univ.
- A. Elbakush (2013-17), postdoc in Gomelsky lab.
- A. Fomicheva (2013-18), postdoc at Colorado State Univ.

M.S. (completed)*:*
- V. Amarendran (2005). M.D.
- J. Dabhi (2011) Quality Control Analyst, Genzyme Sanofi.
- X. Tang (2014), Res. Asst., China
- J. Hinshaw (2017), joint with A. Lyuksyutova; M.D. student (WWAMI).
- M. Lazic (2017), Ph.D. student, Univ. Alberta.
- S. Dhungana (2018), joint with J. Bushman; Res. Asst., UCLA.
- T. Doherty (2018): Res. Technician at Plenti.
- R. Abrar (2019).

Current: T. Muna (since 2018; joint with Dr. Bushman); S. Feeman (since 2019).

♦ Committee member: J. Spellman (M.S.), R. Harlander (M.S.), D. Mummey (Ph.D.), R. Thalken (Ph.D.), D. Motriuk-Smith (Ph.D.), T. Azinyui (M.S.), J. Grahnen (Ph.D.), Y. Xiao (Ph.D.), V. Koseoglu (Ph.D.), A. Konrad (Ph.D.), Y. Li (Ph.D.), S. Knight (M.S.), J. Hu (Ph.D.), J. Lai (Ph.D.), E. Yarunova-Gottshal (Ph.D.), P. Benziher (Ph.D.); H.F. Ortiz (M.S.); A. Orlenko (Ph.D.), A. Dey (Ph.D.), N. Toruan (M.S.), C. Vassalo (Ph.D.), B. Cao (Ph.D.), H. Wang (Ph.D.), R. Hermansen (Ph.D.), C. Nordyke (Ph.D., Chemistry); G. Sah (Ph.D.); A.J. Martín Rodríguez (Ph.D., Univ. de La Laguna, Spain); M. Keirn (M.S.); F. Li (Ph.D, Karolinska Inst., Sweden); M. Helling (Ph.D.); N. Mushnikov; Y. Ahmed; C. Zhou; K. Subedi, J. Bruno.

♦ Rotations: L. Waggener, M. Tian, R. Kumaraswami (2000); V. Amarendran, D. Ryjenkov (2001); M. Pendleton (2004); N. Kirienko, D. Litonin, A. Schmidt, J. Obuya (2005); X. Fang (2006); L. Sychova, D. Pathak, J. Singh, V. Koseoglu (2008); L. Lowder (2009); R. Thomas (2010); S. Khan (2011), B. Xia, W. Huang (2012); R. Abrar, S. Stettner, T. Sulerud, P. Chen, S. Dhungana (2014); M. Lazic (2016); B. Saiz, M. Wetzler, Y. Estifanos (2019).

Undergraduate students: W. Candellaria (‘01F; ‘02S; UWyo NSF EPSCoR Research Scholarship); R. Green (‘02Su); D.G. Corson (‘03Su; UWyo NSF EPSCoR Research Scholarship; '03F); K. Chitty (‘03Su); M. Chivvis (‘04S); S. Derhak (‘04Su; ’04F; UWyo NSF EPSCoR Research Scholarship; ’05Su & F); S. Knight (’05Su); J. Lairscey (’06S); J. Harris (’06S), J. Reed (’06F–’10S; three UWyo NSF EPSCoR Research Scholarships; two Wyoming NASA Research Scholarships; INBRE Research Scholarship; winner in poster competition at the RMB ASM meeting; Ph.D. student, Univ. Nebraska); Z. Arendsee (‘07Su, ’08F; UWyo NSF EPSCoR Research Scholarship; ’09Su, F; Ph.D. student, Univ. Iowa); M. Yu (’07Su); N. Hull (’08F–’11 S; three Wyoming-NASA Research Scholarships; ’10, 3rd place in poster competition, RMB ASM meeting; Ph.D. student, UWyo); R. Schaefer (‘10F–‘13F; UWyo INBRE Research Scholarship); R. Grieshbach (’10F–‘12S; WWAMI); S. Schoeber (’10F–‘12S UWyo NSF EPSCoR Research Scholarship); T. Jensen (’11S–‘13S Wyoming NASA Research Scholarship); I. Giri (’11Su, Summer Bioinformatics scholarship); J. Hinshaw (’13S–14S, UWyo INBRE Research Scholarships), E. Paranto (13F–14S); B. Plotkin (‘14S-16); T. Doherty (‘16S); C. Delahaye (‘17F, ‘18S. ‘18F, ‘19S UWyo INBRE Research Scholarships); P. Duale (‘19S UWyo INBRE Research Scholarship).

Visiting scientists: Dr. P. Ivanov, Senior Research Scientist, Moscow State U., Russia (multiple visits 2002-8); Dr. S. Li, postdoc, School of Pharmacy, UWyo (01-05/2003); Dr. S. Braatsch, postdoc, U. of Giessen, Germany (06/2003); Dr. J. Zeilstra-Ryalls, Assoc. Prof. (part of sabbatical), U. of Oakland (08-09/03; 07-08/15); Dr. W. Mwatha, Prof., Kenyata U., Kenia (09/2003-01/04); Dr. I. Fomina, Laboratory Director, Inst. of Fundamental Problems in Biology, Pushchino, Russia and Dept. of Botany, UWyo (12/2003-02/04); Dr. R.E. Sockett, Senior Reader, U. of Nottingham, UK (01-02/2004); A. Sveshnikova, M.S. student, Moscow State U., Russia (08-09/2004); M. Tsuzuki, Ph.D. student, U. of Tokyo, Japan (09/2004); M-H. Ryu, M.S. student, Sogan U., S. Korea (07-08/2005); J. Griese, Ph.D. student, Max Planck Institute for Medical Research, Germany (05/2006); D. Bolotin, M.S. student, Moscow State

University (06-07/2008); M. Ryzhenkova, student of Moscow State University (06-08/2011); M-A. Gilles-Gonzalez, visiting Prof., Texas Southwestern Medical Center (10/2010); G. Xu, visiting Ph.D. student, Nanjing U., China (07-10/2016).

High school students: W. Tarver (SRAP, Summer Research Apprentice Program at UWyo, 6-8-week long program for high school students (ethnic minorities and first generation college students): '02 Su and '03 SRAP; Winner, District School Science Fair '03; M.S from Tuskegee University); X.-F. Liu ('04 SRAP, Best Presentation at the SRAP Symposium; graduated from University of Connecticut); A. Wang ('05 SRAP); J. Reed ('06 SRAP); J. Gomez ('07 & '08 SRAP); L. Perez ('09 SRAP); E. Mothershed ('09 SRAP); C. Crouse ('10 SRAP); B. Plotkin ('10 Su); J. Medrano ('10 SRAP); Anand Nair ('11 F; '12 Su, F; *1st* place in WY State Science Fair, Molecular Biology category); J. George ('12 SRAP); M. Garcia ('12 SRAP); J. Yanez ('13 SRAP); J. Nguyen ('13 SRAP); A. Mackiel ('14 SRAP); H. Peters ('14 SRAP); R. Gimm ('15 SRAP); L. Cannon ('15 SRAP); M. Bindl ('17 SRAP), A. Alcorn ('17 SRAP), A. Islam ('15 F; *1st* place in WY State Science Fair, Molecular Biology category; '18 Su; 2019 WY Junior Science and Humanities Competition, The Outstanding Promise Award); Aru Nair ('17 SRAP; *1st* place in WY State Science Fair, Molecular Biology category; Army Science and Technology Symposium and Showcase, presenter; '18 Su).

Elementary school students: MicroAcademy Project with Laramie Montessori School (2014-16).

SERVICE

National/ International

- Grant proposal review

- NSF panels: 2010 (MCB); 2010 (BBB), 2011 (MCB), 2014 (MCB), 2016 (IOS).
- NIH panels: 2016-19 (ZRG1 IDM S 81-84); 2018 (CMT); 2019 (ZRG1-OTC-M 08).
- German Research Foundation (Deutsche Forschungsgemeinschaft, DFG): 2016 (SPP1879); 2016 (SPP1926); 2017 Centers of Excellence in Immunology and Infectious Diseases; 2019 (SPP1879/2); 2019 (SPP1926/2)
- Mail reviewer (last 5 years): NIH, European Science Foundation; The Wellcome Trust, UK; Medical Research Council, UK; French Research Agency; Council for the Earth and Life sciences, The Netherlands; Swiss National Science Foundation; Austrian Science Fund; Biomedical Research Council of Singapore; Natural Sciences and Engineering Research Council of Canada.

- Manuscript review

- Editorial Boards: *Appl Environ Microbiol* (2005-17); *J Bacteriol* (2009-2019); *Mol Microbiol* (2014-present).
- Guest editor: Special issue of *ACS Synthetic Biology* "Synthetic Photobiology" (2014); Guest Assoc. Editor for *PLoS Genetics* (2017).
- Reviewer ad hoc (last 5 years): *Biochemistry, Crit Rev Biochem Mol Biol, Infect Immun, J Am Chem Soc, J Biol Chem, mBio, mSphere, Microbiol, Mol Microbiol, Nature, Nature Chem Biol, Nature Commun, Nature Meth, Nature Struct Biol, Photochem Photobiol Sci, PLoS Biol, PLoS Comp Biol, PLoS Genetics, PLoS Pathog, Proc Natl Acad Sci USA, Sci Reports, Sci Signaling, Sci Translat Med, Structure.*

- Meeting organization

Optogenetic Technologies and Applications. Society for Biological Engineering. Co-chair. Boston, MA (2019); 115th ASM General Meeting (New Orleans, LA); Convener, Plenary session "Cellular decision making" (2015); 16th Intl Congress on Photobiology (Cordoba, Argentina). Co-convener "Optogenetics in biomedicine and biotechnology" (2014); 113th ASM General Meeting (Denver, CO), Convener, "A light guide to microbial photobiology: from physiology to synthetic biology" (2013); Intl Symposium "Metabolic Diversity and Genomic Complexity" (Houston, TX), Organizing Committee (2003, 2011); 104th ASM General Meeting (New Orleans, LA); Co-convener, Division K Symposium "Novel protein domains in microbial signal transduction: from genomics to biology" (2004);

- Additional natl/internatl service appointments

Intl. Symp. on Phototrophic Prokaryotes, Scientific Committee (2012-18); American Society for Microbiology (ASM), Morrison Rogosa Awards Committee (2006-13); Rocky Mountain Branch of ASM: Secretary & Treasurer (2006-08); President-elect (2011-12), President (2012-13).

University/ Department

Standing Committees

2017-present UW Sensory Biology Center, Internal Advisory Committee.
2008-present Graduate Program in Molecular Biology; 2015-present: Committee Chair.
2004-present Microbiology Program, Steering Committee.

Current Committees

2019-20 Sensory Biology Center, Faculty Search Committee

Past Committee work

- Dept. of Molecular Biology Faculty Search Committees: 2000, 2004, 2005, 2006 (Chair), 2009, 2017 (Chair), 2018 (Chair), 2019.
- Reviewer of UW Agricultural Experiment Station proposals (2006, 2018).
- Scholarship Committee, College of ANR (2000-2017).
- Panel member, Agricultural Experiment Station proposals (2010; 2016).
- T&P Committee, College of ANR (2010-12).
- College of ANR Committee on Graduate Assistantships (2012).
- Advisory Committee to VP Research on the Nucleic Acid Exploration Core Facility (2009-12).
- Molecular and Cellular Life Sciences Graduate Program Committee (2005-08).
- Reviewer of Wyoming NASA graduate scholarships (2009).
- Curriculum Committee, Dept. of Molecular Biology (2004-09).
- Molecular Biology Committee on distribution of the AP positions (2006).
- Judge, Wyoming Schools Science Fairs (2003, '04).
- Reviewer of EPSCoR scholarship applications (2002).
- Graduate student recruitment Colorado colleges (2002); Russian Universities (2004, 2006, 2008).

INVITED SEMINARS AND ORAL PRESENTATIONS *(last 10 years)*

2020 Gordon Conference on Cyclic Nucleotide Phosphodiesterases, Switzerland; 6th Young Microbiologists Symposium on Microbe Signalling, Organisation and Pathogenesis, Univ. Southampton, UK.

2019 Dept. of Chemical & Biological Engineering, UW; Bacterial Genetic Engineering Workshop, Karolinska Inst., Sweden.

2018 Next Generation Optogenetics, Bonn, Germany; European Research Council Symposium 'Noninvasive Manipulation of Gating in Ion Channels', noMAGIC, Gargnano del Garda, Italy; Dept. Biological Sciences, Univ. of Idaho, Moscow, ID; Dept. Plant Pathology, Nanjing Agricultural Univ., China; Jiangsu Academy of Agricultural Sciences, Nanjing, China; 9th Intl. Conf. on Cell Therapy, Shanghai, China.

2017 Inst. of Physiology, Univ. of Bonn, Germany; Intl. Conference on Tetrapyrrole Photoreceptors of Photosynthetic Organisms, Chicago, IL (keynote); Saturday University, Pinedale, WY; Wyoming Global Technology Summit, Jackson, WY; Sensory Biology Center Inauguration, Univ. of WY, Laramie, WY; Dept. Molecular Physiology & Biol. Physics, Univ. of Virginia, Charlottesville, VA.

2016 Dept of Microbiology, Michigan State Univ., East Lansing, MI; TEDx Gillette Avenue, Gillette, WY; Annual Meeting of American Society for Photobiology, Tampa, FL.

2015 Dept of Microbiology, Tumor and Cell Biology, Karolinska Institute, Stockholm, Sweden; International Symposium on c-di-GMP signalling, Berlin, Germany; Dept of Microbiology, Natl Univ. Ireland – Galway, Ireland; 'After Biofilm' Conference, Stockholm, Sweden; 115th ASM General Meeting, New Orleans, LA; Dept of Pharmacology & Systems Therapeutics, Icahn School of Medicine at Mount Sinai, New York.

2014 Gordon Conference on Cyclic Nucleotide Phosphodiesterases (short talk), South Hadley, MA; 16th Intl Congress on Photobiology, Cordoba, Argentina; Dept. of Chemistry, Emory Univ., Atlanta, GA; Division of Microbial Sciences, UC-Davis, CA.
2013 Wind River Conference on Prokaryotic Biology, Estes Park, CO (keynote); 113th ASM General Meeting, Denver, CO.
2012 Gordon Conference on Photosensory Receptors and Signal Transduction (short talk), Galveston, TX; Intl Conference on c-di-GMP and *Xanthomonas* (keynote), Taichung, Taiwan; Wind River Conference on Prokaryotic Biology (plenary talk), The Resort on Mt. Charleston, NV; 36th Meeting of the American Society for Photobiology, Montreal, Canada; 14th Intl Symp. on Photosynthetic Prokaryotes (plenary talk), Porto, Portugal.
2011 Mini-Symposium "Genomic Complexity, Metabolic Diversity and Regulatory Networks (Celebration of the scientific career of Dr. Samuel Kaplan), Houston, TX; 111th ASM General Meeting, New Orleans, LA; Dept. of Microbiology, Pathology and Immunology, Colorado State Univ., Ft. Collins, CO; Intl. Conference on Tetrapyrrole Photoreceptors of Photosynthetic Organisms, Berlin, Germany; Dept. of Microbiology and Immunology, Indiana Univ. School of Medicine, Indianapolis, IN; Physiology Club, Univ. of Wyoming, Laramie, WY.
2010 Dept. of Microbiology and Molecular Genetics, Oklahoma State Univ., Stillwater, OK; Dept. of Bacteriology The Distinguished Lectures in Microbiology Series, Univ. of Wisconsin – Madison, WI; Dept. of Microbiology and Immunology, Stritch School of Medicine, Loyola Univ. Chicago, Maywood, IL; Dept. of Microbiology, Univ. of Washington, Seattle, WA; 6th Intl. Conference on Porphyrins and Phthalocyanines, Santa Fe, NM.

PUBLICATIONS

Total citations: ~8,000. Hirsch index, H=44 (Google Scholar).
https://scholar.google.com/citations?user=EBV-dlEAAAAJ&hl=en

91 Han S, Shen D, Wang YC, Chou SH, **Gomelsky M**, Gao YG, Qian G. 2019. A YajQ-LysR-like, c-di-GMP-dependent system regulating biosynthesis of an antifungal antibiotic in a crop-protecting bacterium, *Lysobacter enzymogenes*. ***Mol Plant Pathol*** in press.
90 Pallegar P, Pena-Castillo L, Langille E, **Gomelsky M**, Lang A. 2019. Cyclic-di-GMP-mediated regulation of gene transfer and motility in *Rhodobacter capsulatus*. ***J Bacteriol*** 10.1128/JB.00554-19.
89 Mushnikov NV, Fomicheva A, **Gomelsky M**, Bowman G. 2019. Inducible asymmetric cell division and cell differentiation in a bacterium. ***Nat Chem Biol*** 15:925-931.
88 Fomicheva A, Zhou C, Sun QQ, **Gomelsky M**. 2019. Engineering adenylate cyclase activated by near-infrared window light for mammalian optogenetic applications. ***ACS Synth Biol*** 8:1314-1324.
87 Xu G, Han S, Huo, C, Chin KH, Chou SH, **Gomelsky M**, Qian G, Liu F. 2018. Signaling specificity in the c-di-GMP-dependent network regulating antibiotic synthesis in *Lysobacter*. ***Nucl Acids Res*** gky803.
86 Zhang J, Chen T, Yang Y., Du J, Li H, Troxell B, He M, Carrasco S, **Gomelsky M**, Yang XF. 2018. Positive and negative regulation of glycerol utilization by the c-di-GMP binding protein PlzA in *Borrelia burgdorferi*. ***J Bacteriol*** pii: JB.00243-18.
85 Bjarnsholt T, Buhlin K, Dufrêne YF, **Gomelsky M**, Moroni A, Ramstedt M, Rumbaugh KP, Schulte T, Sun L, Åkerlund B, Römling U. 2018. Biofilm formation – What we can learn from recent developments. ***J Intern Med*** 284:332-345.
84 Latanova AA, Petkov S, Kilpelainen A, Jansons J, Latyshev O, Kuzmenko Y, Hinkula J, Abakumov M, Valuev-Elliston V, **Gomelsky M**, Karpov V, Chiodi F, Wahren B, Logunov D, Starodubova E, Isaguliants M. 2018. Codon optimization and improved delivery/immunization regimen enhance the immune response against wild-type and drug-resistant HIV-1 reverse transcriptase, preserving its Th2-polarity. ***Sci Rep*** 8:8078.
83 Elbakush AM, Miller KW, **Gomelsky M**. 2018. CodY-mediated c-di-GMP-dependent inhibition of mammalian cell invasion in *Listeria monocytogenes*. ***J Bacteriol*** 200:e00457-17.
82 **Gomelsky M**. 2017. Photoactivated cells link diagnosis and therapy. ***Sci Transl Med*** 9:eaan3936.

81 Ryu MH, Fomicheva F, O'Neal L, Alexandre G, **Gomelsky M**. 2017. Using light-activated enzymes for modulating intracellular c-di-GMP levels in bacteria. ***Methods Mol Biol*** 1657:169-186.
80 O'Neal L, Ryu MH, **Gomelsky M**, Alexandre G. 2017. Optogenetic manipulation of c-di-GMP levels reveals the role of c-di-GMP in regulating aerotaxis receptor activity in *Azospirillum brasilense*. ***J Bacteriol*** 199:e00020-17.
79 Ryu MH, Fomicheva F, Moskvin OV, **Gomelsky M**. 2017. Optogenetic module for dichromatic control of c-di-GMP signaling. ***J Bacteriol*** 199:e00014-17.
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PATENTS AND PATENT APPLICATIONS

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