CURRICULUM VITAE

NAME: Wlodek Mandecki

PRESENT TITLE: Adjunct Professor

OFFICE ADDRESS:
Department of Microbiology, Biochemistry and Molecular Genetics
Rutgers University – New Jersey Medical School
225 Warren St., Newark, NJ 07101-1709
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CITIZENSHIP: U.S.A.

EDUCATION:

a. University of Warsaw
Department of Physics
Warsaw, Poland
B.S. Biophysics
1975

b. Institute of Biochemistry and Biophysics
Polish Academy of Sciences
Warsaw, Poland
Ph.D. Biochemistry
1979

POSTDOCTORAL TRAINING

a. University of Colorado, Boulder
Department of Chemistry
Postdoctoral Research Associate
1981 – 1983

b. University of Wisconsin, Madison
Department of Biochemistry
Postdoctoral Research Associate
1980 – 1981

c. University of California, Los Angeles, School of Medicine
Department of Biological Chemistry
Postdoctoral Scholar
1979 – 1980

d. Institute of Biochemistry and Biophysics
Polish Academy of Sciences
Warsaw, Poland
Research Associate
1979

MILITARY

N/A

ACADEMIC APPOINTMENTS:

Department of Microbiology and Molecular Genetics
Rutgers University – New Jersey Medical School
Adjunct Professor
2003 to present

OTHER EMPLOYMENT OR MAJOR VISITING APPOINTMENTS:

1999 – present: President, PharmaSeq, Inc., 11 Deer Park Dr., Suite 104, Monmouth Jct., NJ; Concurrent position: p-Chip Corporation, Chicago, IL

1996 – 1998: Director, Molecular Biology, DGI Biotechnologies, Edison, NJ

1983 – 1995: Manager, Molecular Biology Department, Abbott Laboratories, Abbott Park, IL

MEMBERSHIPS, OFFICES AND COMMITTEE ASSIGNMENTS IN PROFESSIONAL SOCIETIES

AAAS Member

HONORS AND AWARDS:

National Registry Who's Who in Executive and Professional, 2000

Who's Who in the World, 17th Edition 2000

Trainer, NIH Biotechnology Training Grant, University of Chicago, 1993-1995

Who's Who in Science and Engineering, 1992-1993

Phoenix Award, ADD, Abbott Laboratories, 1991

Presidential Award, Abbott Laboratories, 1991

Prometheus Award, ADD, Abbott Laboratories, 1989

Award, ADD XPLOR Technology, Abbott Laboratories, 1989

Scientific Innovation Award, ADD, Abbott Laboratories, 1989

Volwiler Society (Scientific Ladder, Abbott Laboratories) 1989-1995

Presidential Award, Abbott Laboratories, 1984

State-wide Award for Most Useful M.S. Thesis from Polish Universities", 1975

Distinguished Fellow, The Kosciuszko Foundation Collegium of Eminent Scientists, 2015- present

BOARDS OF DIRECTORS/TRUSTEES

Advisory Board Member, Center for Photonics and Optoelectronic Materials (POEM), Princeton University, 1999-2000.

Trustee, Institute of Biochemistry and Biophysics, Polish Academy of Sciences, 1992-1995.

Member, Technical Advisory Board, Abbott Laboratories, 1988-1991.

Board Member, The Polish Institute of Arts and Sciences of America, New York, NY, 2011-2019

Chair of the Sendzimir Award in Applied Sciences Committee, PIASA, New York, NY, 2017-present

Board of Trustees, Member, The Kosciuszko Foundation, New York, NY, 2015-present

SERVICE ON NATIONAL GRANT REVIEW PANELS, STUDY SECTIONS, COMMITTEES:

a. National and Regional

Reviewer, ARRA Challenge Grants, NIH, July 2009, GGG-F Review Panel

Reviewer, ARRA Challenge Grants, NIH, July 2009, BST-M Review Panel

Reviewer, ARRA Challenge Grants, NIH, July 2009, CB-N Review Panel

Reviewer on IMST-G(10) B Scientific Review Group, Biological Chemistry and Biophysics (Small Business), Bethesda, MD, Nov 9-10, 2009

Reviewer, ARRA NIH Director's Opportunity Competition, May 2010, GGG-F(55) Review Panel

Reviewer on NIH IMST-G(10) Scientific Review Group, Biological Chemistry and Biophysics (Small Business), Bethesda, MD, Oct 25-26, 2010

Reviewer on NIH IMST-G(10) Scientific Review Group, Biological Chemistry and Biophysics (Small Business), Bethesda, MD, Nov 7-8, 2011

Reviewer on NIH ZAI1-SM-M(J1)1 panel for evaluating applications received in response to RFA-AI-13-019, "Drug Target Development and Validation for Antimicrobial-Resistant Pathogens (R21/R33)", Silver Spring, MA, Oct 31-Nov 1, 2013

Reviewer on NIH ZRG1 BCMB-G10(B) Study Section (Drug Discovery and Development SBIR/STTR proposals), Nov 16, 2015, Bethesda, MD

Reviewer, NIH SBIR Study Section, Biological Chemistry, Biophysics and Assay Development, ZRG1 IMST-J (10) B, Bethesda, MD, Nov 14-15, 2019

Reviewer, NIH SBIR Study Section, Instrumentation, Environmental, and Occupational Safety, ZRG1 IMST (12), June 28-29, 2021

b. Medical School

Review Committee, New Jersey Medical School Center for Advanced Proteomics Matching Fund Program, February 2008

Review Committee, New Jersey Medical School Intramural Grant Program, June 2008

Review Committee, New Jersey Medical School, Biomedical Research Support Grants Program, November 2010

c. Hospital

None

d. Department

None

e. Editorial Boards (Ad Hoc Reviewer)

Biochemistry
Biotechniques
Chemical Physical Letters
Journal of Theoretical Biology

SPONSORSHIP OF POSTDOCTORAL FELLOWS:

Joanna Perla-Kajan
Kiran Poruri
Maxim Chudaev
Rachana Bhatt

PUBLICATIONS

a. Refereed Original Articles in Journals

1. Bhatt R, Chudaev M, **Mandecki W**, Goldman E. Engineered EF-Tu and tRNA-Based FRET Screening Assay to Find Inhibitors of Protein Synthesis in Bacteria. Assay Drug Dev Technol. 2018 May/Jun;16(4):212-221

2. **Mandecki W**, Qian J, Gedzberg K, Gruda M, Rodriguez EF, Nesbitt L, Riben M. (2018) Electronic p-Chip-based system for identification of glass slides and tissue cassettes in histopathology laboratories. J Pathol Inform 9:9

3. **Mandecki W**, Kopacka WM, Qian Z, Ertwine V, Gedzberg K, Gruda M, Reinhardt D, Rodriguez E. (2017) Tagging of test tubes with electronic p-Chips for use in biorepositories. Biopreserv Biobank. 15(4):293-304

4. Shah S, **Mandecki W**, Li J, Gryczynski Z, Borejdo J, Gryczynski I, Fudala R (2016) FRET study in oligopeptide-linked donor–acceptor system in PVA matrix. Methods Appl Fluoresc 4:047002

5. **Mandecki W**, Rodriguez EF, Drawbridge J (2016) Tagging of individual embryos with electronic p-Chips. Biomed Microdevices 18(6):100. PMID: 27787762

6. Li J, Veltri RW, Yuan Z, Christudass CS, **Mandecki W** (2015) Macrophage Inhibitory Cytokine 1 Biomarker Serum Immunoassay in Combination with PSA Is a More Specific Diagnostic Tool for Detection of Prostate Cancer. PLoS ONE 10(4):e0122249. doi:10.1371/journal.pone.0122249

7. Liu W, Kavaliauskas D, Schrader JM, Poruri K, Birkedal V, Goldman E, Jakubowski H, **Mandecki W**, Uhlenbeck OC, Knudsen CR, Goldman YE, Cooperman BS (2014) Labeled EF-Tus for rapid kinetic studies of pretranslocation complex formation. ACS Chem Biol. 9(10):2421-243

8. Chudaev M, Poruri K, Goldman E, Jakubowski H, Jain MR, Chen W, Li H, Tyagi S and **Mandecki W** (2013) Design and properties of efficient tRNA:EF-Tu FRET system for studies of ribosomal translation. Protein Eng Des Sel 26:347-357

9. Rich R, Li J, Fudala R, Gryczynski Z, Gryczynski I, **Mandecki W** (2012) Properties of coatings on RFID p-Chips that support plasmonic fluorescence enhancement in bioassays. Anal Bioanal Chem 404(8):2223-2231; PMID: 22960796

10. Jolley-Rogers G, Yeates DK, Crost J, Cawsey EM, Suter P, Webb J, Morris RG, Qian Z, Rodriguez E and **Mandecki W** (2012) Ultra-small RFID p-Chips on the heads of entomological pins provide an automatic and durable means to track and label insect specimens. Zootaxa 3359:31-42

11. Bharill S, Chen C, Stevens B, Kaur J, Smilansky Z, **Mandecki W**, Gryczynski I, Gryczynski Z, Cooperman BS, Goldman YE (2011) Enhancement of single-molecule fluorescence signals by colloidal silver nanoparticles in studies of protein translation. *ACS Nano* 2011 5:399-407; PMID: 19137060

12. Li, J., Wang, Z., Gryczynski, I. and **Mandecki, W** (2010) Silver nanoparticle-enhanced fluorescence in microtransponder-based immuno- and DNA hybridization assays. *Anal Bioanal Chem* 398:1993-2001; PMID: 20798932

13. Gruda MC, Pinto A, Craelius A, Davidowitz H, Kopacka WM, Li J, Qian J, Rodriguez E, Kuspiel E and **Mandecki W** (2010) A system for tagging laboratory mice with light-activated microtransponders. *J Am Assoc Lab Anim Sci* 49:826-831; PMID: 21205448

14. Perla-Kajan J, Lin X, Cooperman B, Goldman E, Jakubowski H, Knudsen C, **Mandecki W** (2010) Properties of E. coli EF-Tu Mutants Designed for Fluorescence Resonance Energy Transfer from tRNA Molecules. *Protein Eng Des Sel* 23:129-136

15. Gryczynski I, Matveeva EG, Sarkar P, Bharill S, Borejdo J, **Mandecki W**, Akopova I, Gryczynski Z (2008) Metal-enhanced fluorescence on silicon wafer substrates, Chem Phys Lett 462,327-330

16. Lin X, Flint J, Azaro M, Coradetti T, Kopacka W, Streck D, Wang Z, Dermody J, and **Mandecki W** (2007) Microtransponder-based multiplex assay for genotyping cystic fibrosis. Clin Chem 53: 1372-1376

17. **Mandecki W**, Ardelt B, Coradetti T, Davidowitz H, Flint J, Huang Z, Kopacka W, Lin X, Wang Z, and Darzynkiewicz Z (2006) Microtransponders, the miniature RFID electronic chips, as platforms for cell growth in cytotoxicity assays. Cytometry Part A 69A:1097-1105

18. Song, L., **Mandecki W.**, Goldman, E. (2003) Expression in *E.coli* of non-ORF sequences isolated from phage display: upstream start and stop required for translation reinitiation. FASEB J. 17: 1674-1681.

19. Zemsky, J., **Mandecki W,** and Goldman, E. (2002) Genetic analysis of translation in the -1 frame of an unusual non-ORF sequence isolated from phage display. Gene Expression 10: 109-114.

20. Cain, J.T., W.W. Clark, L.A. Schafer, D.J. Ulinski, M.H. Mickle, **Mandecki W** (2001) Energy harvesting for DNA gene sifting and sorting. Int. J. Parallel Dist. Sys. Networks, 4: 140-149.

21. Goldman, E., Korus, M. and **Mandecki W** (2000) Efficiencies of translation in three reading frames of unusual non-ORF sequences isolated from phage display. FASEB J. 14: 603-611.

22. Hexham, M.J., White, K.D., Carayannopoulos, L.N., **Mandecki W**, Brissette, R., Yang, Y.S., and Capra, J.D. (1999) A human immunoglobulin (Ig)A calpha3 domain motif directs polymeric Ig receptor-mediated secretion.. J. Exp. Med. 189: 747-52.

23. Carcamo, J., Ravera, M.W., Brissette, R., Dedova, O., Beasley, J., Alam-Moghi, A., Wan, J., Blume, A. and **Mandecki W.** (1998) Unexpected frameshifts from gene to expressed protein in a phage-displayed peptide library. Proc. Natl. Acad. Sci. USA. 95: 11146-11151.

24. **Mandecki W** (1998) The game of chess and searches in protein sequence space. Trends in Biotechnology 16: 200-202.

25. Hackett, J. Jr., Hoff-Velk J., Golden, A., Brashear, J., Robinson, J., Rapp, M., Klass, M., Ostrow, D.H. and **Mandecki W** (1998) Recombinant mouse-human chimeric antibodies as calibrators in immunoassays that measure antibodies to *Toxoplasma gondi.* J. Clin. Microbiol. 36: 1277-1284.

26. Ravera, M.W., Carcamo, J., Brissette, R., Alam-Moghe, A., Dedova, O., Cheng, W., Hsiao, K.C., Klebanov, D., Shen, H., Tang, P., Blume, A. and **Mandecki W** (1998)

Identification of an allosteric binding site on the transcription factor p53 using a phage-displayed peptide library. Oncogene 16: 1993-1999.

27. Pope, A.R., Pritchard, K., Hackett, J., Williams, A., Roberts, A., **Mandecki, W.** and Johnson, K.S. (1996) In vitro selection of a high affinity antibody to estradiol using a phage display human antibody. Immunotechn. 2: 209-217.

28. Chen, Y.-C., Delbrook, K., Dealwis, C., Mimms, L., Mushahwar, I. and **Mandecki, W.** (1996) Discontinuous epitopes of hepatitis B surface antigen derived from a filamentous phage peptide library. Proc. Natl. Acad. Sci. U.S.A. 93: 1997-2001.

29. Grihalde, N.D., Chen, Y.-C., Golden, A., Gubbins, E. and **Mandecki, W.** (1995) Epitope mapping of anti-HIV monoclonal antibodies and characterization of mimotopes using a filamentous phage peptide library. Gene 166: 187-195.

30. Sandusky, P., Wooten, E.W., Kavanaugh, T., **Mandecki, W.** and Zuiderweg, E.R.P. (1995) Occurence, solution structure and stability of DNA hairpins stabilized by a GA/CG helix unit. Nucleic Acids Res. 23: 4717-4725.

31. **Mandecki, W.**, Chen, Y.-C. Jack, Grihalde, N. (1995) A mathematical model for biopanning (affinity selection) using peptide libraries on filamentous phage. J. Theor. Biol. 175: 523-530.

32. Dealwis, C.G., Chen, L., Brennan, C.A., Christianson, K., **Mandecki, W.** and Abad-Zapatero, C. (1995) Three-dimensional structure of the D153G mutant of *E.coli* alkaline phosphatase: a mutant with weaker magnesium binding and increased catalytic activity. Protein Engineering 9: 865-71.

33. Dealwis, C.G., Brennan, C.A., **Mandecki, W.** and Abad-Zapatero, C. (1995) Crystallographic analysis of reversible metal binding observed in a mutant (Asp153->Gly) of *E.coli* alkaline phosphatase. Biochemistry 34: 13967-13973.

34. Hayden, M., Traphagen, L., Wilkins, J., Schmitz, E., Laird, D., Herrmann, R. and **Mandecki, W.** (1995) Expression in *Escherichia coli* and affinity purification of a CKS-troponin I fusion protein. Protein Expr. Purif. 6: 256-264.

35. Brennan, C.A., Christianson, K., LaFleur, M.A. and **Mandecki, W.** (1995) A molecular sensor system based on genetically engineered alkaline phosphatase. Proc. Natl. Acad. Sci. U.S.A. 92: 5783-5787.

36. Brennan, C., Christianson, K., Surowy, T. and **Mandecki, W.** (1994) Modulation of enzyme activity by antibody binding to an alkaline phosphatase-epitope hybrid protein. Protein Engineering 7: 509-514.

37. Chen, L., Neidhardt, D., Park, C., Kohlbrenner, W.M., **Mandecki, W.**, Bell, S., Sowadski, J., Abad-Zapatero, C. (1992) 3-D structure of a mutant (Asp101>Ser) of *E.coli* alkaline phosphatase with higher catalytic efficiency. Protein Engineering 5: 605-610.

38. Mollison, K.W., Fey, T.A., Krause, R.A., Miller, L., Edalji, R.P., Conway, R.G., **Mandecki, W.**, Shallcross, M.A., Kawai, M., Or, Y.S., Greer, J., Carter, G.W. C5a structural requirements for neutrophil receptor interaction. In: Progress in Inflammation Research and Therapy, N.R. Ackerman, R.J. Bonney and A.F. Wolton, eds., Agents and Actions Suppl. 35: 17-21 (1991).

39. **Mandecki, W.**, Shallcross, M.A., Sowadski, J. and Tomazic-Allen, S. (1991) Mutagenesis of conserved residues within the active site of *Escherichia coli* alkaline phosphatase yields enzymes with increased k_{cat}. Protein Engineering 4: 801-804.

40. Hass, M.G., Bolling, T.J, Kinders, R.J., Henslee, J.G., Mandecki,W., Dorwin, S. and Shively, J.E. (1991) Preparation of synthetic polypeptide domains of carcinoembryonic antigen and their use in epitope mapping. Cancer Res. 51: 1876-1882.

41. **Mandecki, W.**, Hayden, M., Shallcross, M.A. and Stotland, E. (1990) A totally synthetic plasmid for general cloning, expression and mutagenesis in *Escherichia coli*. Gene 94: 103-107.

42. **Mandecki, W.**, Shallcross, M.A. and Kavanaugh, T.J. (1990) Simple biological assay for the error rate upon cloning of synthetic oligodeoxynucleotides. BioTechniques 9: 56-59.

43. Bolling, T.J. and **Mandecki, W.** (1990) An Escherichia coli expression vector for high-level production of heterologous proteins in fusion with CMP-KDO synthetase. BioTechniques 8: 488-492.

44. **Mandecki, W.** (1990) A method for construction of long randomized open reading frames and polypeptides. Protein Engineering 3: 221-226.

45. **Mandecki, W.**, Bolling, T., Shallcross, M.A. and Kavanaugh, T. (1990) Gene synthesis by the *Fok*I method. DNA and Protein Eng. Tech. 2: 33-36.

46. **Mandecki, W.** and Hayden, M. (1990) Serial method of gene synthesis. DNA and Prot. Eng. Tech. 2: 32-33.

47. **Mandecki, W.** (1990) Bridge mutagenesis: a procedure for oligonucleotide-directed introduction of mutations via the host DNA repair system. DNA and Protein Eng. Tech. 2: 29-32.

48. Mollison, K.W., **Mandecki, W.**, Zuiderweg, E.R.P., Fayer, L., Fey, T.A., Krause, R.A., Conway, R.G., Miller, L., Edalji, R.P., Shallcross, M.A., Lane, B., Fox, J.L., Greer, J. and Carter, G.W. (1989) Identification of receptor-binding residues in the inflammatory complement protein C5a by site-directed mutagenesis. Proc. Natl. Acad. Sci. U.S.A. 86: 292-296.

49. Hayden, M. and **Mandecki, W.** (1988) Gene synthesis by serial cloning of oligonucleotides. DNA 7: 571-577.

50. **Mandecki, W.** and Bolling, T.J. (1988) *Fok*I method of gene synthesis. Gene 68: 101-107.

51. **Mandecki, W.** and Hayden, M. (1988) High-resolution polyacrylamide gel electrophoresis of oligonucleotides using L-histidine buffer. DNA 7: 57-62.

52. Mollison, K.W., Fey, T.A., Krause, R.A., **Mandecki, W.**, Fox, J.L. and Carter, G.W. (1987) High level C5a gene expression and recovery of recombinant C5a from Escherichia coli. Agents and Action 21: 366-370.

53. Joachimiak, A., Marmorstein, R.Q., Schevitz, R.W., **Mandecki, W.**, Fox, J.L. and Sigler, P.B. (1987) Crystals of the *trp* repressor-operator complex suitable for X-ray diffraction analysis. J. Biol. Chem. 262: 4917-4921.

54. **Mandecki, W.** (1986) Oligonucleotide-directed double-strand break repair in plasmids of *Escherichia coli*: A method for site-specific mutagenesis. Proc. Natl. Acad. Sci. USA 83: 7177-7181.

55. **Mandecki, W.**, Krajewska-Grynkiewicz, K. and Klopotowski, T. (1986) A quantitative model for non-randon generalized transduction, applied to phage P22 - *Salmonella typhimurium* system. Genetics 114: 633-657.

56. **Mandecki, W.**, Powell, B.S., Mollison, K.W., Carter, G.W. and Fox, J.L. (1986) High-level expression of a gene encoding the human complement factor C5a in *Escherichia coli*. Gene 43: 131-138.

57. **Mandecki, W.**, Goldman, R.A., Powell, B.S. and Caruthers, M.H. (1985) The *lac* up-promoter mutant with increased homology to the consensus promoter sequence. J. Bacteriol. 164: 1353-1355.

58. **Mandecki, W.** Mollison, K.W., Bolling, T.J., Powell, B.S., Carter, G.W., Fox, J.L. (1985) Chemical synthesis of a gene encoding the human complement fragment C5a and its expression in *Escherichia coli*. Proc. Natl. Acad. Sci. USA 82: 3543-3547.

59. **Mandecki, W.** and Caruthers, M.H. (1984) Mutants of the *lac* promoter with large insertions and deletions between the CAP binding site and the -35 region. Gene 31: 273-277.

60. Munson, L.M., **Mandecki, W.**, Caruthers, M.H. and Reznikoff, W.S. (1984) Oligonucleotide mutagenesis of the *lacP*UV5 promoter. Nucleic Acids Res. 12: 4011-4017.

61. **Mandecki, W.** and Reznikoff, W.S. (1982) A *lac* promoter with a changed distance between -10 and -35 regions. Nucleic Acids Res. 10: 903-912.

62. **Mandecki, W.**, Fowler, A.V. and Zabin, I. (1981) Position of the *lacZ*X90 mutation and hybridization between complete and incomplete β-galactosidase. J. Bacteriol. 147: 694-697.

63. Welply, J., **Mandecki, W.**, Fowler, A.V., Zabin, I. (1980) β-galactosidase ω-complementation with a small cyanogen bromide peptide. Biochem. Biophys. Res. Commun. 93: 223-227.

64. **Mandecki, W.** (1979) A kinetic model for interaction of regulatory proteins and RNA polymerase with the control region of the *lac* operon. J. Theor. Biol. 81: 105-122.

65. **Mandecki, W.** and Wild, J. (1979) Expression of the *lac* operon in RNA polymerase mutants of *E.coli*. Molec. Gen. Genet. 173: 339-343.

b. Books, Monographs and Chapters

1. Løset GÅ, **Mandecki W**, Sandlie I (2021) Phage display and selection of protein ligands. In Practical Handbook of Microbiology, 4th Edition (eds. L. Green, E. Goldman), CRC Press, Boca Raton, FL, chapter 9

2. **Mandecki, W.,** Goldman, E., Sandlie, I. and Løset G.A. (2015) Phage display and selection of protein ligands. In: Practical Handbook of Microbiology, Third Edition (eds. E. Goldman and L. Green), CRC Press, Boca Raton, FL, part I, chapter 9, 115-134.

3. Robinson EH, **Mandecki W** (2011) Distributed Decisions: New Insights from Radio-Tagged Ants. In: Ant Colonies: Behavior in Insects and Computer Applications. Ed. EC Sun, pp. 109-128, Nova Science Publishers, Hauppauge, NY.

4. **Mandecki, W.** and Goldman, E. (2008) Phage display and selection of protein ligands. In: Practical Handbook of Microbiology, Second Edition (eds. E. Goldman and L. Green), CRC Press, Boca Raton, FL, part I, chapter 9, 101-116.

5. **Mandecki W**, Bharill S, Borejdo J, Cabral D, Cooperman BS, Farrell I, Fetter L, Goldman E, Gryczynski Z, Jakubowski H, Liu H, Luchowski R, Matveeva E, Pan D, Qin H, Tennant D, Gryczynski I. (2008) Fluorescence enhancement on silver nanostructures: studies of components of ribosomal translation in vitro. In Single Molecule Spectroscopy and Imaging (eds. Enderlein J, Gryczynski ZK, Erdmann R) Proc. of SPIE (Society of Photo-Optical Instrumentation Engineers), vol. 6862, 68620T.

6. **Mandecki, W.** (2007) Microtransponder-based biodetection system. In: Biodetection Technologies: Technological Responses to Biological Threats, 4th Edition, pp. 233-251. Knowledge Press, Brookline, MA.

7. **Mandecki, W.**, M.G. Pappas, N. Kogan, Z. Wang, B. Zamlynny. (2002) Light-powered microtransponders for high multiplex-level analysis of nucleic acids. Chapter 4 *In:* R. Kordal, A. Usmani, W. T. Law (Eds.) Microfabricated Sensors: Application of Optical Technology for DNA Analysis, 815, American Chemical Society, pp. 57-69.

8. Pappas, M.G., Z. Wang, B. Zamlynny, **W. Mandecki.** (2000) Light-powered microchips for diagnostics, genomics and drug discovery. Luminescence Forum; 6 :4.

9. **W. Mandecki.** (1999) Three-dimensional arrays of microtransponders derivatized with oligonucleotides. Proceedings from the IBC Biochip Technologies Conference, San Francisco, June 1998. D&MD Library Series publication #1941. Drug & Market Development Publications, Southborough, MA 01772, pp. 179-187.

10. Hackett, J. Jr., Hoff, J., Golden, A., Dealwis, C., Ostrow, D. and **Mandecki, W.** (1997) The effect of site-specific mutagenesis of a cysteine residue on the stability of a monoclonal antibody. pp. 5.9.1-5.9.16. In: W. Hori (ed.), Antibody Engineering II. New Technology, Applications and Commercialization. Vol. 2. IBC USA, Southborough, MA.

11. **Mandecki, W.**, Brissette, R., Carcamo, J., Chen, W., Dedova, O., Hsiao, K.C., Moghe, A., Ravera, M., Shen, H., Tang, P. and Blume, A. (1997) Use of libraries of long peptides in drug discovery. Proceeding of the IBC Conference on Phage Display Techniques in Lake Tahoe, NV, pp. 231-254.

12. **Mandecki, W.** (1991) Evolution of proteins from random sequences: a model for the protein sequence space and an experimental approach. The Santa Fe Institute Series on Studies in the Sciences of Complexity, Vol. IX: "Molecular Evolution on Rugged Landscapes: Proteins, RNA and the Immune Systems", Eds.: A.S. Perelson and S.A. Kauffman. Addison-Wesley, pp. 239-254.

13. Zuiderweg, E.R.P., Nettesheim, D.G., Fesik, S.W., Olejniczak, E.T., **Mandecki, W.**, Mollison, K.W., Greer, J. and Carter, G.W. (1990) Studies of the 3D structure of complement protein C5a and C5a mutants by 2D and 3D NMR. In: Frontiers of NMR in Molecular Biology, UCLA Symposia on Molecular and Cellular Biology, New Series, Vol. 109. pp. 75-87. Eds.: D. Live, I. Armitage and D. Patel. Alan R. Liss, Inc. New York, NY.

14. Gagne, D.G., Lyter, P., Mollison, K., **Mandecki, W.** and Miller, M.F. (1985) Use of an artificial test substrate for evaluation of immunocytochemical labelling at the EM level. In: Proceedings of the 43rd Annual Meeting of the Electron Microscopy Society of America, G.W. Bailey, Ed., San Francisco Press, Inc., San Francisco, California.

15. Fox. J.L., Bolling, T.J., Powell, B.S., Mollison,K.W., Carter, G.W. and **Mandecki, W.** (1985) The synthesis and expression of a gene for the complement factor C5a. In: Cellular

Regulation and Malignant Growth, Ed. S. Ebashi, pp. 9-15, Japan Scientific Societies Press, Tokyo/Springer-Verlag, Berlin.

16. Caruthers, M.H., Barone, A.D., Bracco, L.P., Dodds, D.R., Eisenbeis, S.J., Goldman, R.A., **Mandecki, W.**, McBride, L.J., Nasoff, M.S., Noble, S.A. and Y.-Y Tang. (1985) Chemical and biochemical studies on gene control regions. Proceedings of the 16-th FEBS Congress, Part C, pp. 265-289, VNU Press, Moscow, USSR.

17. Caruthers, M.H., Becauge, S.L., Efcavitch, J.F., Fisher, E.F., Goldman, R.A., deHaseth, P.L., **Mandecki, W.**, Matteucci, M.D., Rosendahl, M.S. and Stabinsky, Y. (1982) Chemical synthesis and biological studies on mutated gene control regions. Cold Spring Harbor Symp. Quant. Biol. XLVII: 419-426.

18. Reznikoff, W.S., Maquat, L.E., Munson, L.M., Johnson, R.C. and **Mandecki, W.** (1982) The *lac* promoter: Analysis of structural signals for transcription initiation and identification of a new sequence specific event. In: Promoters: Structure and Function, Eds.: R. Rodriguez and M.J. Chamberlin. Praeger Scientific, New York, pp. 80-95.

c. Patents Held

U.S. patents issued are listed in the table below (from USPTO, as of 12/19/2021).

	PUB. APP. NO.	Title
1	20190390191	Constructing enzyme-based sensors
2	20180091224	All optical identification and sensor system with power on discovery
3	20180088119	High resolution assays for prostate cancer
4	20180085747	Tagging of small containers for biological and chemical samples with light-activated microtransponders
5	20160370380	Combinatorial antibody diagnostic
6	20160175801	Genomic-scaled nucleic acid synthesis, and other combinatorial syntheses
7	20150118678	Assay for identification of therapeutics targeting ternary complex formation in protein synthesis
8	20140106470	Compact analyzer for acquiring characteristics of small tabs placed in a vessel
9	20130123118	Metal nanoparticle structures for enhancing fluorescence-based arrays
10	20110077659	Apparatus and method to deliver a microchip
11	20060252697	Compounds that bind to growth hormone receptor
12	20050282173	Single molecule fluorescence assay
13	20030143619	Method of determining the sequence of nucleic acids employing solid-phase particles carrying transponders
14	20030063351	Microtransponder sensing system
15	20030062988	Identification system having an identifiable object with a photo-activated microtransponder
16	20020143144	Screening of drugs from chemical combinatorial libraries employing transponders
17	20020006673	Electronically-indexed solid-phase assay for biomolecules
18	20010044109	Method of determining the sequence of nucleic acids employing solid-phase particles carrying transponders

Patent applications published (from USPTO as of 12/19/2021):

	PUB. APP. NO.	Title
1	20210318331	Combinatorial antibody diagnostic
2	20210258138	Light-triggered transponder
3	20190390191	Constructing enzyme-based sensors
4	20180091224	All optical identification and sensor system with power on discovery
5	20180088119	High resolution assays for prostate cancer
6	20180085747	Tagging of small containers for biological and chemical samples with light-activated microtransponders
7	20160370380	Combinatorial antibody diagnostic
8	20160175801	Genomic-scaled nucleic acid synthesis, and other combinatorial syntheses
9	20150118678	Assay for identification of therapeutics targeting ternary complex formation in protein synthesis
10	20140106470	Compact analyzer for acquiring characteristics of small tabs placed in a vessel
11	20130123118	Metal nanoparticle structures for enhancing fluorescence-based arrays
12	20110077659	Apparatus and method to deliver a microchip
13	20060252697	Compounds that bind to growth hormone receptor
14	20050282173	Single molecule fluorescence assay
15	20030143619	Method of determining the sequence of nucleic acids employing solid-phase particles carrying transponders
16	20030063351	Microtransponder sensing system
17	20030062988	Identification system having an identifiable object with a photo-activated microtransponder
18	20020143144	Screening of drugs from chemical combinatorial libraries employing transponders
19	20020006673	Electronically-indexed solid-phase assay for biomolecules
20	20010044109	Method of determining the sequence of nucleic acids employing solid-phase particles carrying transponders

d. Abstracts (since 2008)

1. W. Mandecki, S. Bharill, S. Blanchard, C. Chen, M. Chudaev, B.S. Cooperman, E. Goldman, Y. Goldman, I. Gryczynski, H. Jakubowski, J. Kaur, W. Liu, B. Stevens. **Ribosome-based, single-molecule method to acquire sequence data from genomes.** Poster presentation at NIH New Sequencing Technologies Grantee Meeting in San Diego, CA, April 2011.

2. Chudaev M, Poruri K, Chinnaraj M, Goldman E, Jakubowski J, Kaur J, Cooperman BS and Mandecki W. **Ribosome-based single molecule method to acquire sequence data from genomes.** Poster presentation at NIH New Sequencing Technologies Grantee Meeting in Chapel Hill, NC, March 2010.

3. Bharill B, Chen C, Stevens B, Kaur J, Smilansky Z, Mandecki W, Gryczynski I, Gryczynski Z, Cooperman BS and Goldman YE. **Enhancement of single molecule fluorescence signals by colloidal silver nanoparticles in studies of ribosome dynamics.** Poster presentation at NIH New Sequencing Technologies Grantee Meeting in Chapel Hill, NC, March 2010.

4. Mandecki W, Chudaev M, Poruri K, Chinnaraj M, Goldman E, Jakubowski H, Kaur J and Cooperman BS. **EF-Tu:tRNA FRET system for studies of ribosomal translation**. Ribosomes 2010 Conference, Orvieto, Italy, May 2010.

5. Cooperman BS, Chen C, Farrell I, Kaur J, Liu H, Liu W, Poruri K, Rosenberg G, Stevens B, Zhang H, Mandecki W, Smilansky Z and Goldman YE. **Mechanism and dynamics of the elongation cycle**. Ribosomes 2010 Conference, Orvieto, Italy, May 2010.

6. Medical School Summer Student Research Program, Poster Session, UMDNJ-Newark, July 2009.

7. McCormick M, Goldman E, Mandecki W. **Isolation of *E. coli* K38 ribosomes and tests of activity**. 2009 NJ

8. Liu W, Poruri K, Mandecki W, Cooperman B.S.. **Signal transduction on the ribosome: The timing of EF-Tu release from aminoacyl-tRNA following ternary complex binding**. ASBMB Meeting, April 2010.

9. Cabral D, Chen C, Kaur J, Liu H, Rosenblum G, Stevens B, Wang Y, Zhang H, Smilansky Z, Mandecki W, Cooperman BS, Goldman YE. **Dynamics of tRNA Motions during protein synthesis: single molecule studies of ribosomes in the pre- and post-translocation states**. Poster presentation at NIH New Sequencing Technologies Grantee Meeting in San Diego, CA, March 2009.

10. Perla-Kajan J, Poruri K, Lin X, Cabral D, Kaur J, Goldman E, Jakubowski H, Cooperman B, Knudsen CR and Mandecki W. **Configuring FRET assay for acquiring fluorescence signals from translating ribosome.** Poster presentation at NIH New Sequencing Technologies Grantee Meeting in San Diego, CA, March 2009.

11. Pan D, Liu H, Cabral D, Goldman YE, Mandecki W, and Cooperman BS. **Functional fluorescent tRNAs for single molecule translation studies**. Poster presentation at NIH New Sequencing Technologies Grantee Meeting in San Diego, CA, March 2008.

12. Mandecki W, Bharill S, Borejdo J, Cabral D, Cooperman BS, Farrell I, Fetter L, Goldman E, Gryczynski Z, Jakubowski H, Perla-Kajan J, Knudsen CR, Lin X, Liu H, Luchowski R, Matveeva E, Pan D, Qin H, Tennant D, Gryczynski. **Fluorescence enhancement on silver nanostructures: studies of components of ribosomal translation *in vitro*.** Poster presentation at NIH New Sequencing Technologies Grantee Meeting in San Diego, CA, March 2008.

PRESENTATIONS 2009-present:

Virginia Commonwealth University, October 2018
Prof. David Shugar Anniversary Conference, Inst Biochem Biophysics PAN, Warsaw, Sept 2015
PIASA Congress, Warsaw, Poland, June 2014
PIASA Conference, Arlington, VA, June 2013
Molecular Diagnostic Laboratory, Hamilton, NJ, April 2013
Genesis Biotechnology Group, Hamilton, NJ, January 2013
Rutgers University, RWJMS, New Brunswick, NJ, Oct 2012
PIASA (Polish Institute of Arts and Sciences of America), New York, NY, February 2012
PIASA Conference, Arlington, VA, June 2011
Polonia Technica Symposium, New York, NY, June 2011
Polish People's University, Philadelphia, PA, May 2011
NIH Sequencing Technologies Grantee Meeting, San Diego, CA, April 2011
RFID Europe, Cambridge, England, September 2010
NIH Sequencing Technologies Grantee Meeting, Chapel Hill, NC, March 2010
ALA Conference, Palm Springs, CA, January 2010
LRIG Meeting (Mid Atlantic Chapter) on Emerging Technologies, Nov 2009, New Brunswick, NJ
RFID Europe, Cambridge, England, September 2009
NIH Sequencing Technologies Grantee Meeting, La Jolla, CA, March 2009