Irina D.Pogozheva, Ph.D.
Curriculum Vitae

University of Michigan
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PERSONAL INFORMATION

Languages English and Russian (spoken and written)

EDUCATION

1975-1979 **B.S., M.S**. **in Biology with Honors (Biophysics)**, Moscow State University, Moscow, Russia

1979-1985 **Ph.D**. **in Biophysics**, Semionov Institute of Chemical Physics of Russian Academy of Sciences, Moscow (Advisors: Prof. Ostrovskii M.A., Dr. Livshits V.A). Thesis title: "Conformational dynamics and aggregation of rhodopsin molecules in photoreceptor membrane in normal conditions and under photodamage"

1992-1999 **Postdoctoral Fellow**, College of Pharmacy, Department of Medicinal Chemistry, University of Michigan, Ann Arbor, MI (Advisors: Prof.M. Marletta, Prof.H.I. Mosberg)

PROFESSIONAL APPOINTMENTS

1979-1987 **Jr. Research Scientist**, Semionov Institute of Chemical Physics of Russian Academy of Science, Moscow, Russia
Research Advisors: Prof. Ostrovskii M.A., Dr. Livshits V.A
Area of Study: Structure and dynamics of rhodopsin

1987-1992 **Research Scientist**, Semionov Institute of Chemical Physics of Russian Academy of Science, Moscow, Russia
Research Advisors: Prof. Ostrovskii M.A., Dr. Livshits V.A
Area of Study: Structure and dynamics of rhodopsin and other photoreceptor proteins

1992-1993 **Research Fellow**, College of Pharmacy, Department of Medicinal Chemistry, University of Michigan, Ann Arbor, Michigan
Research Advisor: Prof. M. Marletta
Area of Study: Measurement of NO release using EPR traps

1993-1994 **Research Fellow**, College of Pharmacy, Department of Medicinal Chemistry, University of Michigan, Ann Arbor, Michigan
Research Advisor: Prof. H.I.Mosberg
Area of Study: Computational structural modeling of peptides

1994-1999 **Senior Research Fellow**, College of Pharmacy, Department of Medicinal Chemistry, University of Michigan, Ann Arbor, Michigan
Research Advisor: Prof. H.I.Mosberg
Area of Study: Computational structural modeling of peptides and receptors

1999-2003 **Research Investigator,** College of Pharmacy, Department of Medicinal Chemistry, University of Michigan, Ann Arbor, MI
Research Advisor: Prof. H.I.Mosberg
Area of Study: Computational structural modeling of peptides and receptors

2003-2013 **Assistant Research Scientist,** College of Pharmacy, Department of Medicinal Chemistry, University of Michigan, Ann Arbor, MI
Research Advisor: Prof. H.I.Mosberg
Area of Study: Computational modeling of membrane-interacting peptides and proteins

2013-date **Associate Research Scientist**, College of Pharmacy, Department of Medicinal Chemistry, University of Michigan, Ann Arbor, MI
Area of Study: Computational modeling of membrane proteins (in collaboration with Drs Lomize, Mosberg, Ramamoorthy, Raghavan)

RESEARCH EXPERIENCE

I have over 25 years of experience in theoretical and experimental research of membrane proteins including ESR and other spectroscopic studies of rhodopsin, development and application of an ESR-based method for *in situ* measurement of NO release, application of computational methods for modeling of protein structure, conformational transitions, and protein-membrane interactions.

RESEARCH INTERESTS

- Theoretical analysis of protein structure, folding, evolution, and interaction with membranes.
- Modeling of membrane proteins, protein-protein, and protein-ligand complexes in membranes, including G-protein coupled receptors, ABC transporters, and single-helical membrane proteins.
- Computer-aided design of peptides with desired properties, such as receptor-selective ligands, cell-penetrating and antimicrobial peptides.
- Design, development, and maintenance of bioinformatics resources.

SCHOLARLY ACTIVITIES

- Computational modeling of membrane proteins using homology and experimental constraints, including various G-protein coupled receptors (opioid receptors, melanocortin receptors, adrenergic receptors, neurokinin receptors, gonadotropin-releasing hormone receptors, glycoprotein hormone receptors), ABC-transporters (TAP1/TAP2), single-helical membrane proteins (cytochrome P450/ cytochrome b5, cytochrome P450/cytochrome P450 reductase) and membrane-active peptides (colicin toxins, antimicrobial peptides). The developed models were deposited in the PDB, the OPM database, and in the original web site (http://mosberglab.phar.umich.edu/resources/)
- Structure-based design of opioid ligands with desired pharmacological profiles.
- Development of databases for membrane proteins, including the OPM (Orientations of Proteins in Membranes) database for proteins with known structures (more than 6,500 PDB entries corresponding to more than 2,200 proteins and peptides) oriented with respect to the lipid bilayer (http://opm.phar.umich.edu) and the Membranome database (http://membranome.org) of single-helical membrane proteins.

Other Creative Activities

- Participation in community wide experiments on the Critical Assessment of Protein Structure Prediction Methods in 1998, 2000 (CASP3 & 4) with top results in *ab-initio* protein modeling.
- Participation in GPCR structure-based homology modeling and docking assessment experiments (GPCR-DOCK) in 2008 and 2010 with top results in high-accuracy modeling of GPCRs.

Peer-Reviewed Research Publications

1. **Pogozheva, I.D**., Kuznetsov, V.A., Livshits, V.A., Fedorovich, I.B., Ostrovskii, M.A., and Manoshkina, N.B. (1981) Aggregation of rhodopsin molecules in the photoreceptor membranes under light damage. *Biofizika* (Rus), **26**:692-700
2. **Pogozheva, I.D**., Fedorovich, I.B., Ostrovskii, M.A., and Emanuel', N.M. (1981) Photodamage of rhodopsin molecule. SH-group oxidation. *Biofizika* (Rus), **26**:398-403
3. **Pogozheva, I.D**., Kuznetsov, V.A., Livshits, V.A., Fedorovich, I.B., and Ostrovskii, M.A. (1981) Reversible pH-dependent aggregation of rhodopsin molecules in the photoreceptor membranes. *Dokl. Acad. Nauk* USSR (Rus), **260**:1254-1258
4. **Pogozheva, I.D**., Kuznetsov, V.A., Livshits, V.A., Fedorovich, I.B., and Ostrovskii, M.A. (1985) ESR saturation transfer study of photoinduced changes in the hydrophilic regions of rhodopsin. *Biologicheskie membrany,* (Rus), **2**:880-896
5. **Pogozheva, I.D**., Kuznetsov, V.A., Livshits, V.A., Fedorovich, I.B., and Ostrovskii, M.A. (1985) Conformational mobility and interaction of rhodopsin domains. *Biologicheskie membrany,* (Rus), **2**:897-905

6. **Pogozheva, I.D**., Shevchenko, T.F., Livshits, V.A., and Kalamkarov, G.R. (1989) Interaction of rhodopsin and arrestin: the role of rhodopsin phosphorylation. *Biologicheskie membrany,* (Rus), **6**:1237-1247
7. **Pogozheva, I.D**., Shevchenko, T.F., Livshits, V.A., and Kalamkarov, G.R. (1989) Influence of sulfhydryl group modification on arrestin interaction with phosphorylated rhodopsin. *Biologicheskie membrany,* (Rus), **6**:1248-1255
8. Donner, K., Hemila, S., Kalamkarov, G., Koskelainen, A., **Pogozheva, I.**, and Rebrik, T. (1990) Sulfhydyl binding reagents increase the conductivity of the light-sensitive channel and inhibit phototransduction in retinal rods. *Exp.Eye Res*. **51**, 97-105
9. **Pogozheva, I.D**., Shevchenko, T.F., Livshits, V.A., and Kalamkarov, G.R. (1991) Determination of transducin binding sites by local rhodopsin SH-group modification. *Biologicheskie membrany,* (Rus), **8**:44
10. Kalamkarov, G.R., Shevchenko, T.F., and **Pogozheva, I.D**. (1991) The role of HCO_3^-/Cl^- exchange in the regulation of phototransduction in the retinal cell. *Biologicheskie membrany,* (Rus), **8**:1195-1197
11. Koskelainen, A., Donner, K., Hemila, S., Kalamkarov, G., **Pogozheva, I**. (1992) HCO_3^-/Cl^- exchange counteracts alkalinization in rod outer segments. *Investig. Ophtalmol. Vis. Sci*., **33**:1326-1326
12. Kalamkarov, G., **Pogozheva, I**., Shevchenko, T., Koskelainen, A., Hemila, S., and Donner, K. (1996) pH-changes in frog rod upon manipulation of putative pH-regulating mechanisms. *Vision Res*., **36**:3029-3036
13. Lomize, A. L., **Pogozheva, I. D**. and Mosberg, H. I. (1996) Development of a model for the δ opioid receptor pharmacophore: 3. Comparison of the cyclic tetrapeptide, Tyr-*cyclo*-[*D*-Cys-Phe-*D*-Pen]OH with other conformationally constrained δ-receptor selective ligands, *Biopolymers*, **38**: 221-234.
14. Mosberg, H. I., Dua, R. K., **Pogozheva, I.D**. and Lomize, A. L. (1996) Development of a Model for the δ Opioid Receptor Pharmacophore: 4. Residue 3 dehydrophenylalanine analogues of Tyr-*cyclo*-[*D*-Cys-Phe-*D*-Pen]OH (JOM-13) confirm required *gauche* orientation of aromatic side chain, *Biopolymers*, **39**: 287-296.
15. **Pogozheva, I.D.,** Lomize, A. L., Mosberg, H. I. (1997) Transmembrane 7-α-bundle of rhodopsin: distance geometry calculations with hydrogen bonding constraints, *Biophys. J*., **72**:1963-1985. PMCID:PMC1184393
16. **Pogozheva, I.D**., Lomize, A.L., and Mosberg, H.I. (1998) Opioid receptor 3D structures from distance geometry calculations with hydrogen bonding constraints, *Biophys. J*., **75**: 612-634. PMCID:PMC1299737
17. Lomize, A.L., **Pogozheva, I.D**. and Mosberg, H. I. (1999) Structural organization of G-protein-coupled receptors, *J. Computer-Aided Mol. Des*. **13**, 1-29. PMID: 10425600
18. Lomize, A.L., **Pogozheva, I.D**., and Mosberg, H.I. (1999) Prediction of protein structure: the problem of fold multiplicity. *Proteins, Suppl*.**3**, 199-203. PMID:10526369.
19. Lomize, A.L., Reibarkh, M.Y., **Pogozheva, I.D**. (2002) Interatomic potentials and solvation parameters from protein engineering data for buried residues. *Protein Sci*., **11**, 1984-2000. PMCID: PMC2373680
20. Munshi, U.M., **Pogozheva, I.D**., and Menon K.M.J. (2003) Highly conserved serine in third transmembrane helix of the luteinizing hormone/human chorionic gonadotropin receptor regulates receptor activation. *Biochemistry*, **42**:3708-3715.
21. Poulsen, A., Bjornholm, B., Gundertofte, K., **Pogozheva, I.D**., and Liljefors, T. (2003) Pharmacophore and receptor models for neurokinin receptors. *J. Comput. Aided. Mol. Des*., **17**:765-783, PMID:15072436.
22. Fowler, C.B., **Pogozheva, I.D**., LeVine, H., and Mosberg, H.I. (2004) Refinement of a homology model of the μ-opioid receptor using distance constraints from intrinsic and engineered zinc-binding sites. *Biochemistry*, **43**:8700-8710. PMID:15236578.
23. Fowler, C.B., **Pogozheva, I.D**., Lomize, A.L., LeVine, H., and Mosberg, H.I. (2004) Complex of active μ-opioid receptor with cyclic peptide agonist modeled from experimental constraints, *Biochemistry*, **43**, 15796-15810. PMID: 15595835
24. Lomize, A.L., **Pogozheva, I.D**., and Mosberg, H.I. (2004) Quantification of helix-helix binding affinities in micelles and lipid bilayers. *Protein Sci*,**13**:2600-2612. PMCID: PMC2286553.
25. Chai, B.-X., **Pogozheva, I.D**., Lai, Y.-M, Li, J-Y., Neubig, R.R., Mosberg, H.I., and Gantz, I. (2005) Receptor-antagonist interactions in the complexes of agouti protein and agouti-related protein with human melanocortin 1 and 4 receptors. *Biochemistry*, **44**:3418-3431. PMID:15736952.
26. **Pogozheva, I.D**., Chai, B.-X., Lomize, A.L., Fong, T.M., Weinberg, D.H., Nargund, R.H., Mulholland, M.W., Gantz, I., and Mosberg, H.I. (2005) Interactions of human melanocortin receptor-4 with nonpeptide and peptide agonists. *Biochemistry*, **44**, 11329-11341. PMCID:PMC2532597

27. Przydzial, M.J., **Pogozheva, I.D**., Bosse, K.E., Andrews, S.M., Tharp, T.A., Traynor, J.R., and Mosberg HI. (2005) Roles of residues 3 and 4 in cyclic tetrapeptide ligand recognition by the kappa-opioid receptor. *J. Pept. Res*., **65**:333-342. PMID:15787963.
28. Przydzial, M.J., **Pogozheva, I.D**., Ho, J.C., Tharp, T.A., Drankhan, K.E., Sawyer, E., Traynor, J.R., and Mosberg, H.I. (2005) Design of high affinity cyclic pentapeptide ligands for kappa-opioid receptors. *J. Pept. Res*. **66**:255-262. PMID:16218993.
29. **Pogozheva, I.D.**, Przydzial, M.J., and Mosberg, H.I. (2005) Homology modeling of opioid receptor-ligand complexes using experimental constraints. *AAPS J*. **7**:E434-E448. PMID:16353922. PMCID:PMC2750980
30. Kneen, M.M., **Pogozheva, I.D**., Kenyon, G.L., and McLeish, M.J. (2005) Exploring the active site of benzaldehyde lyase by modeling and mutagenesis, *Biochim. Biophys. Acta*, **1753**:263-271. PMID:16226928.
31. Lomize, M.A., Lomize, A.L., **Pogozheva, I.D.**, and Mosberg, H.I. (2006) OPM: orientations of proteins in membranes database. *Bioinformatics*. **22**, 623-625. PMID: 16397007 http://bioinformatics.oxfordjournals.org/content/22/5/623.long
32. Lomize, A.L., **Pogozheva, I.D**., Lomize, M.A., and Mosberg, H.I. (2006) Positioning of proteins in membranes: A computational approach. *Protein Science* **15**, 1318-1333. PMCID: PMC2242528
33. Proneth, B., Xiang, Z., **Pogozheva, I.D.**, Litherland, S.A., Gorbatyuk, O.S., Shaw, A.M, Millard, W.J., Mosberg, H.I., and Haskell-Luevano, C. (2006) Molecular mechanism of the constitutive activation of the L250Q human melanocortin-4 receptor polymorphism. *Chem Biol Drug Des*, **67**:215-229. PMID:16611215.
34. Lomize, A.L., **Pogozheva, I.D**., Lomize, M.A., and Mosberg, H.I. (2007) The role of hydrophobic interactions for positioning of peripheral proteins in membranes. *BMC Struct. Biol.*, **7**, 44. PMCID: PMC1934363.
35. Xiang, Z., **Pogozheva, I.D**., Sorenson, N.B., Wilczynski, A.M., Holder, J.R., Litherland, S.A., Millard, W.J., Mosberg, H.I., and Haskell-Luevano, C. (2007) Peptide and small molecules rescue the functional activity and agonist potency of dysfunctional human melanocortin-4 receptor polymorphisms. *Biochemistry*, **46**:8273-8287.
36. Proneth, B., **Pogozheva, I.D**., Portillo, F.P., Mosberg, H.I., and Haskell-Luevano, C. (2008) Melanocortin tetrapeptide Ac-His-DPhe-Arg-Trp-NH2 modified at the para position of the benzyl side chain (DPhe): importance for mouse melanocortin-3 receptor agonist versus antagonist activity. *J.Med. Chem*., **51**:5585-5593. PMID:18800761.
37. Roof, R.A., Sobczyk-Kojiro, K., Turbiak, A.J., Roman, D.L., **Pogozheva,** I.D., Blazer, L.L., Neubig, R.R., and Mosberg, H.I. (2008) Novel peptide ligands of RGS4 from a focused one-bead, one-compound library. *Chem Biol Drug Des*. , **72**:111-119. PMCID:PMC2917810
38. Tan, K., **Pogozheva, I.D**., Yeo, G.S., Hadaschik, D., Keogh, J.M., Haskell-Leuvano, C., O'Rahilly, S., and Mosberg, H.I., and Farooqi, I.S. (2009) Functional characterization and structural modeling of obesity associated mutations in the melanocortin 4 receptor. *Endocrinology*, **150**:114-125. PMID:18801902. PMCID:PMC2732289
39. Purington, L.C., **Pogozheva, I.D**., Traynor, J.R., and Mosberg, H.I. (2009) Pentapeptides displaying mu opioid receptor agonist and delta opioid receptor partial agonist/antagonist properties. *J. Med. Chem*., **52**:7724-7731, PMID: 19788201. PMCID:PMC2788680
40. René, P., Le Gouill, C., **Pogozheva, I.D.**, Lee, G., Mosberg, H.I., Farooqi, I.S., Valenzano, K.J., and Bouvier, M. (2010) Pharmacological chaperones restore function to MC4R mutants responsible for severe early-onset obesity. *J. Pharmacol. Exp. Ther*., **335**:520-532, PMID:20826565.
41. Zhang, W.X., Thakur, V., Lomize, A., **Pogozheva, I.,** Panagabko, C., Cecchini, M., Baptist, M., Morley, S., Manor, D., and Atkinson, J. (2011) The contribution of surface residues to membrane binding and ligand transfer by the α-tocopherol transfer protein (α-TTP). *J. Mol. Biol*., **405**:972-988. PMCID: PMC3038628.
42. Lomize, A.L., **Pogozheva, I.D**., and Mosberg, H.I. (2011) Anisotropic solvent model of the lipid bilayer. 1. Parameterization of long-range electrostatics and first solvation shell effects. *J. Chem. Inf. Model.,* **51**:918-929, PMID: 21438609 PMCID:PMC3089899
43. Lomize, A.L., **Pogozheva, I.D**., and Mosberg, H.I. (2011) Anisotropic solvent model of the lipid bilayer. 2. Energetics of insertion of small molecules, peptides, and proteins in membranes. *J. Chem. Inf. Model.,* **51**:930-946, PMID: 21438606 PMCID: PMC3091260
44. Ho, D., Lugo, M.R., Lomize, A.L., **Pogozheva, I.D.**, Singh, S.P., Schwan, A.L., and Merrill, A.R. (2011) Membrane topology of the colicin E1 channel using genetically encoded fluorescence. *Biochemistry*, **50**:4830-4842. PMID: 21528912

45. Janovick, J.A., **Pogozheva, I.D**., Mosberg, H.I., and Conn, P.M. (2011) Salt bridges overlapping the GnRHR agonist binding site reveal a coincidence detector for GPCR activation. *J. Pharmacol. Exp. Ther*., **338**:430-442. PMID: 21527534
46. Purington LC, Sobczyk-Kojiro K, **Pogozheva ID**, Traynor JR, and Mosberg HI. (2011) Development and in vitro characterization of a novel bifunctional μ-agonist/δ-antagonist opioid tetrapeptide. *ACS Chem Biol*. **6**:1375-1381.
47. Lomize, M.A., **Pogozheva, I.D**., Joo, H., Mosberg, H.I., and Lomize, A.L. (2012) OPM database and PPM web server: resources for positioning of proteins in membranes. *Nucleic Acids Res*. **40** (Database issue): D370-D376. PMID: 21890895 PMCID: PMC3245162
48. Janovick, J.A., **Pogozheva, I.D**., Mosberg, H.I., Cornea, A., and Conn, P.M. (2012) Rescue of misrouted GnRHR mutants reveals its constitutive activity. *Mol. Endocrinol*. **26**:1179-1188 PMID:22595961
49. Anand J.P., Purington, L.C., **Pogozheva, I.D**., Traynor, J.R., and Mosberg, H.I. (2012) Modulation of opioid receptor ligand affinity and efficacy using active and inactive state receptor models. *Chem Biol Drug Des*. **80**:763-770. PMID:22882801
50. **Pogozheva, I.D**., Tristram-Nagle, S., Mosberg, H.I., Lomize, A.L. (2013) Structural adaptation of proteins to different biological membranes. BBA-Biomembranes, **1828**: 2592–2608. PMID:23811361

Book chapters

1. Siegert, P., Pohl, M., Kneen, M.M., **Pogozheva, I.D**., Kenyon, G.L., and McLeish, M.J. (2003) Exploring the substrate specificity of Benzoylformate decarboxylase, Pyruvate decarboxylase and Benzaldehyde lyase. In:*Thiamin:Catalitic mechanisms and role in normal and disease state*, Eds.: Jordan. F and Patel .S., Marcel Dekker, Inc., NY, 275-290.
2. **Lomize, A.L**., and **Pogozheva, I.D**. (2013) Solvation models and computational prediction of orientations of peptides and proteins in membranes. Chapter 7 In: Membrane Proteins: Folding, Association, and Design, (Ghirlanda G., and Senes A. Eds), Series: Methods in Molecular Biology, Humana Press, 2013, Vol. 1063, 246 p.

Abstracts and Conference Proceedings

1. **Pogozheva, I.D**., Lomize, A.L., and Mosberg, H.I. (1995) 3D models of rhodopsin and metarhodopsin II. *FASEB J.* , **9**: A1431-A1431
2. **Pogozheva, I.D**., Lomize, A.L., and Mosberg, H.I. (1996) Modeling of the δ-opioid receptor transmembrane α-bundle. Proceedings of the 14th American Peptide Symposium, *In Peptides: Chemistry, Structure, and Biology*, P. Kaumaya and R.S. Hodges, Eds., Mayflower Scientific, England, pp. 350-351.
3. Bradbury, F.A., **Pogozheva I.D**., Menon K.M.J. (1998) The role of hydrogen bonding in activation of the LH/hCG receptor. *Biol. Repropduction*, **58** (Suppl.1):121.
4. **Pogozheva, I.D**., Lomize, A.L., and Mosberg, H.I. (1999) The origin of specificity in the opioid receptor family. Proceedings of the 15th American Peptide Symposium,1997, *In Peptides: Frontiers of Peptide Science,* J.P. Tam and P.T.P. Kaymaya, Eds, KLUWER/ESCOM, pp. 530-532.
5. Fowler, C.B., **Pogozheva, I.D.** Akil, H., LeVine, H. III, and Mosberg, H.I. (2000) Determination of the relative position between TMH V and VI of the μ-opioid receptor using site-directed mutagenesis. Proceedings of the 16th American Peptide Symposium,1999, Minneapolis, MN, In: *Peptides for a New Millenium*, Eds: G.B. Fields, J.P. Tam and G.Barany, KLUWER Acad. Publishers, pp. 374-375.
6. **Pogozheva, I.D.,** Lomize, A.L., and Mosberg, H.I. (2000) Modeling of secretin-like G-protein coupled receptors. Proceedings of the 16th American Peptide Symposium, 1999, Minneapolis, MN,, In: *Peptides for a New Millenium*, Eds: G.B. Fields, J.P. Tam and G.Barany, KLUWER Acad. Publishers, pp. 585-586.
7. Haskell-Luevano, C., Xiang, Z., Andreasen, A.M., Haskell, K.R., Wilczynski, A.M., **Pogozheva, I.D**., Mosberg, H.I., and Sorenson, N.B. Discovery of a ligand that compensates for decreased endogenous agonist potency of melanocortin-4 receptor polymorphisms identified in obese humans (2007) 20th American Peptide Society Symposium, Montreal, Canada, *Biopolymers*, **88** SI: 566-566
8. Lomize, A.L., Lomize, M.A., Mosberg, H. I., and **Pogozheva, I.D**. (2007) Spatial positions of transmembrane, integral monotopic, and peripheral proteins in the lipid bilayer. 51st Annual Meeting of the Biophysical Society, Baltimore, MD, *Biophys.J*., S1:75A

9. Haskell-Luevano, C., Xiang, Z., Wilczynski, A.M., Haskell, K.R., Andreasen, A.M., Litherland, S.A., Millard, W.J, **Pogozheva, I.D**., Mosberg, H.I., and Sorenson, N.B. (2009) Discovery of a ligand that compensates for decreased endogenous agonist potency of melanocortin-4 receptor polymorphisms identified in obese humans. 20th American Peptide Society Symposium, Montreal, Canada, 2007, *Adv. Exp. Med. Biol*.; **611**:509-510, PMID:19400288.
10. Lomize, A.L., **Pogozheva, I.D**., Wang, S., and Mosberg, H. I. (2009) Prediction of membrane binding, orientation and permeability of peptide-like molecules using a continuum model of the lipid bilayer. 53d Annual Meeting of the Biophysical Society, Boston, MA, *Biophys. J***. 96 (3)** S1: 404a-405a.
11. Lomize, A.L., **Pogozheva, I.D.** and Mosberg, H. I. (2010) Positioning of proteins in membranes of variable lipid composition. 54th Annual Meeting of the Biophysical Society, San Francisco, CA, *Biophys. J***. 98 (3)** S1: 487a.
12. Lomize, A.L., **Pogozheva, I.D**. and Mosberg, H. I. (2011) Large-scale computational analysis of protein arrangement in the lipid bilayer**.** 55th Annual Meeting of the Biophysical Society, Baltimore, MD, *Biophys. J***. 100 (3)** S1: 492a.
13. Lomize, A.L., **Pogozheva, I.D**. and Mosberg, H. I. (2011) OPM database and PPM web server for large-scale analysis of protein arrangement in the lipid bilayer, 25th Anniversary Symposium of the Protein Society (Boston, MA, July 2011).
14. Yeomans, L., Purington, L., Kojiro, K., **Pogozheva, I.,** Jin, Y., Traynor, J. R., and Mosberg, H. I. (2011) Design, synthesis and optimization of MOR/DOR peptidomimetic analogs of JOM-13. 22nd American Peptide Symposium, San Diego, CA, *Biopolymers*,**96**: 464-464.
15. Lomize, A.L., **Pogozheva, I.D**. and Mosberg, H. I. (2012) Thermodynamic approach to large-scale modeling of alpha-helices in membranes. 56th Annual Meeting of the Biophysical Society, San Diego, CA, *Biophys.J.,* **102**: 490a - 491a.
16. Pogozheva I.D., Mosberg H.I., Lomize A.L., Structural adaptation of proteins to different biological membranes. 57th Annual Meeting of the Biophysical Society, Philadelphia, PA, 2-6 February 2013. *Biophys. J*., **104** (2 Suppl.1): 536a

RESEARCH SUPPORT

Ongoing

- *NSF DBI-1145367 (Advances in Bioinformatics)* 07/01/2012 – 06/30/2015 (Co-PI; Lomize, PI; $672,514) "ABI Development: Association of protein helices in membranes: from physics to biology."

Completed

- *NSF DBI 0849713 (Advances in Bioinformatics)* 09/01/2009–12/31/2011 (Co-PI; Lomize, PI; $416,510) "Orientations of proteins in membranes: tools and database."
- *Upjohn Research Award from UM College of Pharmacy* 04/15/2004-04/14/2005 (PI, $40,000) "Automated modeling of remotely related GPCRs".
- *NIH 5R01AI044115* 01/01/2009-12/31/2013(Co-PI; Raghavan, PI; $1,705,540) "Interactions and mechanisms of function of the TAP complex."

PROFESSIONAL ACTIVITIES

Professional Societies

Biophysical Society, 2010-date
Protein Society, 2011-date

Review-groups

Scientific reviewer for "European Journal of Medicinal Chemistry", "Journal of Medicinal Chemistry", and "Journal of the American Chemical Society".

TEACHING ACTIVITIES

Consulting graduate and undergraduate students from the Mosberg laboratory in molecular modeling of peptides and proteins using academic and commercial software for computational modeling