1st Oct. 2019

# Ebrahim Barzegari

ASSISTANT PROFESSOR of COMPUTATIONAL BIOPHYSICS
Born 1980 (Abarkuh, IRAN); Married

Medical Biology Research Center (MBRC), Health Technology Institute,

Kermanshah University of Medical Sciences, Kermanshah, Iran.

Tel.: +98 83 34276473; Fax: +98 83 34276471

e-mail address: e.barzegari@kums.ac.ir; e.barzegari@gmail.com

https://orcid.org/0000-0002-4412-6129

## QUALIFICATIONS

- ✓ Postdoctoral fellow at Institute of Biochemistry and Biophysics, University of Tehran, Tehran, Iran (2016-2017)
- ✓ PhD in "Biophysics". Tarbiat Modares University, Tehran, Iran (2008-2014)
- ✓ MSc in "Biophysics". Tarbiat Modares University, Tehran, Iran (2005-2008)
- ✓ BSc in "Cell and Molecular Genetics". Shahid Chamran University, Ahvaz, Iran (1999-2003)

## RESEARCH INTERESTS AND EXPERIENCE

Topics: Neurodegenerative Diseases; Fibril Assembly; Protein Structure; Pharmaceutical Biomaterials; Non-coding RNA; Clinical and Medical Associations

Techniques: Structural Bioinformatics of Proteins; Data Science (*Statistics, Data Mining, Machine Learning, Artificial Intelligence, Optimization*); Rational Drug Design (*Hit Identification and Hit-to-lead, Molecular Docking, Molecular Dynamic Simulation*); Analyses of Genomic Data using MATLAB and R code; Medical Informatics, Epidemiologic and Healthcare Data Analytics

## PUBLICATIONS

1) Jahandideh S, **Barzegari E**, Kendall E. The process of patient engagement in outpatient cardiac rehabilitation programs. *Behav Change*. **2019** (In press).

2) Behmard E, **Barzegari E**. Insights into resistance mechanism of hepatitis C virus nonstructural 3/4A protease mutant to boceprevir using umbrella sampling simulation study. *J Biomol Struct Dyn*. **2019**, DOI: 10.1080/07391102.2019.1621212

3) Derakhshankhah H, Hosseini A, Taghavi F, Jafari S, Lotfabadi A, Ejtehadi MR, Shahbazi S, Fattahi A, Ghasemi A, **Barzegari E**, Evini M, Saboury AA, Shahri SMK, Ghaemi B, Ng EP, Awala H, Omrani F, Nabipour I, Raoufi M, Dinarvand R, Shahpasand K, Mintova S, Hajipour MJ, Mahmoudi M. Molecular interaction of fibrinogen with zeolite nanoparticles. *Sci Rep*. **2019**;9(1):1558.

4) Mohammadi-Khanaposhtani M, Yahyavi H, **Barzegari E**, Imanparast S, Heravi MM, Faramarzi MA, Foroumadi A, Adibi H, Larijani B, Mahdavi M. New Biscoumarin Derivatives as Potent α-Glucosidase Inhibitors: Synthesis, Biological Evaluation, Kinetic Analysis, and Docking Study. *Polycycl Aromat Compd*. **2018**, DOI: 10.1080/10406638.2018.1509359

5) Lotfabadi A, Hajipour MJ, Derakhshankhah H, Peirovi A, Saffar S, Shams E, Fatemi E, **Barzegari E**, Sarvari S, Moakedi F, Ferdousi M, Atyabi F, Saboury AA, Dinarvand R. Biomolecular Corona Dictates Aβ Fibrillation Process. *ACS Chem Neurosci*. **2018**;9(7):1725-1734.

6) Derakhshankhah H, Izadi Z, Lotfabadi A, Alaei L, Saboury AA, Dinarvand R, Divsalar A, Seyedarabi A, **Barzegari E**, Evini M. Colon cancer and specific ways to deliver drugs to the large intestine. *Anticancer Agents Med Chem*. **2017**;17:1317-1327.

7) Derakhshankhah H, Hajipour MJ, **Barzegari E**, Lotfabadi A, Ferdousi M, Saboury AA, Ng EP, Raoufi M, Awala H, Mintova S, Dinarvand R, Mahmoudi M. Zeolite nanoparticles inhibit Aβ-fibrinogen interaction and formation of consequent abnormal structural clot. *ACS Appl Mater Interfaces*. **2016**;8(45):30768-30779.

8) **Barzegari Asadabadi E**, Abdolmaleki P. A review and comparative assessment of machine learning approaches for interaction site prediction in membrane proteins. *Curr Bioinform*. **2015**;10(3):284-291.

9) Jafari SA, Jahandideh S, Jahandideh M, **Barzegari Asadabadi E**. Prediction of road traffic death rate using neural networks optimised by genetic algorithm. *Intl J Inj Contr Saf Promot.* **2015**;22(2):153-157.

10) Ghaffari MA, Zeinali M, **Barzegari Asadabadi E**, Jamalan M, Jahandideh S. Affinity enhancement of HER2-binding Z(HER2:342) affibody via rational design approach: a molecular dynamics study. *J Biomol Struct Dyn*. **2014**;32(12):1919-1928.

11) **Barzegari Asadabadi E**, Abdolmaleki P. Predictions of Protein-Protein Interfaces within Membrane Protein Complexes. *Avicenna J Med Biotech.* **2013**;5(3):148-157.

12) Mirzaie S, Chupani L, **Barzegari Asadabadi E**, Shahverdi AR, Jamalan M. Novel inhibitor discovery against aromatase through virtual screening and molecular dynamic simulation: a computational approach in drug design. *EXCLI J.* **2013**;12:168-183.

13) Jamalan M, Zeinali M, **Barzegari Asadabadi E**. Design of peptidomimetics for inhibition of HER2 receptor dimerization by a combination of virtual screening, MD simulations and QSAR *in silico* methods. *Chem Biol Drug Des.* **2013**;81:455-462.

14) Jahandideh S, Asefzadeh S, Jahandideh M, **Barzegari Asadabadi E**, Jafari A. The comparison of methods for measuring quality of hospital services by using neural networks: A case study in Iran (2012). *Intl J Healthcare Manag.* **2013**;6(1):45-50.

15) Asefzadeh S, Jahandideh S, **Barzegari Asadabadi E**. Dental services marketing: A case of dental clinics in Iran. *Intl J Healthcare Manag.* **2012**;5(1);12-18.

16) Jamalan M, **Barzegari Asadabadi E**. Affinity maturation of Herceptin via rational design of a point mutation: a molecular dynamic simulation study. *Exp Anim Biol*. **2012**;1(2):11-16. (In Persian)

17) Behmard E, Abdolmaleki P, **Barzegari Asadabadi E**. Mutation in a valine residue induces drastic changes in 3D structure of human prion protein. *Front Life Sci.* **2012**;6(1-2):47-51.

18) Behmard E, Abdolmaleki P, **Barzegari Asadabadi E**, Jahandideh S. Prevalent Mutations of Human Prion Protein: A Molecular Modeling and Dynamics Study. *J Biomol Struct Dyn*. **2011**;29(2):379-389.

19) **Barzegari Asadabadi E**, Abdolmaleki P, Barkooie SMH, Jahandideh S, Rezaei MA. A combinatorial feature selection approach to describe the QSAR of dual site inhibitors of acetylcholinesterase. *Comput Biol Med.* **2009**;39(12):1089-1095.

20) Karami Z, Abdolmaleki P, Rezaei MA, Jahandideh S, **Barzegari Asadabadi E**. Analysis of factors that induce cysteine bonding state. *Comput Biol Med.* **2009**;39(4):332-339.

21) Jahandideh S, Jahandideh S, **Barzegari Asadabadi E**, Askarian M, Movahedi MM, Hosseini S, Jahandideh M. The use of artificial neural networks and multiple linear regression to predict rate of medical waste generation. *Waste Manag.* **2009**;29:2874-2879.

22) Rezaei MA, Abdolmaleki P, Karami Z, **Barzegari Asadabadi E**, Sherafat MA, Moghaddam HA, Fadaie M, Forouzanfar M. Prediction of membrane protein types by means of wavelet analysis and cascaded neural networks. *J Theor Biol.* **2008**;254:817-820.

23) Jahandideh M, Barkooie SMH, Jahandideh S, Abdolmaleki P, Movahedi MM, Hoseini S, **Barzegari Asadabadi E**, Jouni FJ, Karami Z, Firoozabadi NH. Elucidating the protein cold-adaptation: Investigation of the parameters enhancing protein psychrophilicity. *J Theor Biol.* **2008**;255:113-118.

24) **Barzegari Asadabadi E**, Abdolmaleki P, Jahandideh S, Barkooie SMH. A novel combinatorial approach in studying the QSAR of dual site inhibitors of acetylcholinesterase. *J Sci University of Tehran.* **2008**;34(3):31-40. (In Persian)

25) Jahandideh S, Abdolmaleki P, Jahandideh M, **Barzegari Asadabadi E**. Sequence and structural parameters enhancing adaptation of proteins to low temperatures. *J Theor Biol.* **2007**;246(1):159-166.

26) Jahandideh S, Abdolmaleki P, Jahandideh M, **Barzegari Asadabadi E**. Novel two-stage hybrid neural discriminant model for predicting proteins structural classes. *Biophys Chem.* **2007**;128(1):87-93.

27) Jahandideh S, **Barzegari Asadabadi E**, Abdolmaleki P, Jahandideh M, Hoseini S. Protein psychrophilicity: Role of residual structural properties in adaptation of proteins to low temperatures. *J Theor Biol.* **2007**;248(4):721-726.

28) Jahandideh S, Abdolmaleki P, **Barzegari Asadabadi E**. Prediction of future citations of a research paper from number of its internet downloads. *Med Hypotheses* **2007**;69(2):458-459.

---

*Total Citations = 262; h-index = 10 (based on Scopus)*

---

## CONFERENCE ARTICLES

1) Derakhshankhah H, Dinarvand R, Mahmoudi M, Saboury AA, **Barzegari E**. Fibrinogen and Aβ-peptide interaction: Alzheimer Disease. *13th Conference on Biophysical Chemistry*, University of Mohaghegh Ardabili. May 26-27, **2015**.

2) **Barzegari Asadabadi E**, Abdolmaleki P. Interaction site prediction within membrane proteins emphasizing the data imbalance problem. *5th Iranian Conference on Bioinformatics*, Tehran University, Tehran, Iran. May 20-22, **2014**.

3) Jafari SA, Jahandideh S, Jahandideh M, **Barzegari Asadabadi E**. Prediction of accidents mortality rate using Neural Networks optimized by Genetic Algorithm. *3rd International Conference on Reducing Burden of Traffic Accident Challenges & Strategies*, Shiraz University of Medical Sciences. Feb. 27-28, **2013**. (Oral presentation)

4) Jahandideh S, Asefzadeh S, **Barzegari Asadabadi E**. Dental services marketing: a case of dental clinics in Iran. *Shanghai International Conference on Social Science (SICSS)*, Shanghai, China. **2011**. (Oral presentation)

5) Barashki FZ, Abdolmaleki P, **Barzegari Asadabadi E**, Jahandideh S. β-Turn types prediction in proteins using statistical model of LDA and Artificial Neural Network. *9th Iran Biophysical Chemistry Conference*, Tarbiat Modares University, Tehran, Iran. Feb. 24-25, **2010**. (Abstract published in: *J. Iran. Chem. Soc. (JICS)*, 7(Suppl. 1) (**2010**) p. S21).

6) **Barzegari Asadabadi E**, Barkooie SMH, Abdolmaleki P, Jahandideh S. New combinatorial selection approach in QSAR of acetylcholinesterase dual site inhibitors. *2nd Iranian Conference on Bioinformatics*, Tehran University, Tehran, Iran. Oct. 8-9, **2008**.

7) **Barzegari Asadabadi E**, Jahandideh S, Abdolmaleki P, Barkooie SMH. Activity class prediction of dual binding site acetylcholinesterase inhibitors as new candidates for Alzheimer's disease therapy. *9th Iranian Congress of Biochemistry & 2nd International Congress of Biochemistry and Molecular Biology*, Shiraz, Iran. Oct. 29-Nov. 1, **2007**.

8) **Barzegari Asadabadi E**, Jahandideh S, Abdolmaleki P, Barkooie SMH. Linear discriminant analysis applied to quantitative structure activity relationships for dual binding site inhibitors of acetylcholinesterase. *9th Iranian Congress of Biochemistry & 2nd International Congress of Biochemistry and Molecular Biology*, Shiraz, Iran. Oct. 29-Nov. 1, **2007**.

9) Jahandideh S, Abdolmaleki P, **Barzegari Asadabadi E**. γ-Turn types prediction in proteins using the support vector machines. *9th Iranian Congress of Biochemistry & 2nd International Congress of Biochemistry and Molecular Biology*, Shiraz, Iran. Oct. 29-Nov. 1, **2007**.

10) Jahandideh S, **Barzegari Asadabadi E**, Abdolmaleki P. Novel two-stage hybrid neural discriminant model for predicting structural classes of proteins. *9th Iranian Congress of Biochemistry & 2nd International Congress of Biochemistry and Molecular Biology*, Shiraz, Iran. Oct. 29-Nov. 1, **2007**.

## TEACHING EXPERIENCE

- Institute of Biochemistry and Biophysics, University of Tehran, Tehran, Iran (**2016**)
  Lecturer: Bioinformatics and Molecular Modeling
- Islamic Azad University, Islamshahr, Iran (**2015-2016**)
  Lecturer: Biophysics; Biochemistry; Radiation Biology
- Guilan University, Rasht, Iran (**2013-2014**)
  Lecturer: Bioinformatics; Biophysics; Radiation Biology; Computers in Biology; Biothermodynamics (MSc class)
- Shahed University, Tehran, Iran (**2010**)
  Lecturer: Radiation Biology
- Arak University of Medical Sciences, Arak, Iran (**2010**)
  Lecturer: Medical Physics

## TRAINER AT WORKSHOPS

- Workshop on Bioinformatics, Neyshabur Islamic Azad University, **2016**.
- Workshop on Molecular Dynamic Simulations, Neyshabur Islamic Azad University, **2016**.
- Workshop on Molecular Docking, Neyshabur Islamic Azad University, **2016**.
- Workshop on Molecular Dynamic Simulations, Guilan University, **2013**.
- Workshop on Bioinformatics, Qazvin University of Medical Sciences, **2012**.

## EDITORIAL DUTIES

- Reviewer member of “Neurobiology of Disease” (IF= 4.8)
- Reviewer member of “European Journal of Pharmaceutics and Biopharmaceutics” (IF= 3.9)
- Reviewer member of “ACS Chemical Neuroscience” (IF= 3.8)
- Reviewer member of “Bioorganic and Medicinal Chemistry” (IF= 2.9)
- Reviewer member of “Journal of Theoretical Biology” (IF= 2.0)
- Reviewer member of “Journal of Membrane Biology” (IF= 1.9)
- Reviewer member of “Medical Hypotheses” (IF= 1.1)
- Reviewer member of “Journal of Chemical Biology”
- Reviewer member of “Avicenna Journal of Medical Biotechnology”
- Editorial Board member in “Journal of Biochemistry and Molecular Biology Research”

## PROFESSIONAL SOCIETY MEMBERSHIP

- Member of the “Iranian Bioinformatics Society”.