

Golnaz Vahedi

CONTACT 4801 Fairmont Ave, Unit 210
INFORMATION Bethesda, MD, 20814

Cell: (832) 725-0406
vahedig@mail.nih.gov

EDUCATION **National Institutes of Health**, Bethesda, MD

Postdoctoral Training, 2009-2015

- Mentor: John J. O'Shea, M.D.

Texas A&M University, College Station, TX

Ph.D., Electrical Engineering, 2006-2009

- Mentors: Edward R. Dougherty, Ph.D.

University of Alberta, Edmonton, Alberta

M.Sc., Electrical Engineering, 2002-2005

Sharif University of Technology, Tehran, Iran

B.Sc., Electrical Engineering, 1996-2001

AWARDS

- NIH K22 Career Transition Award (NIAID, **Impact Score=10**), 2014.
- NIH Director Award, 2013.
- Philip Godfrey Memorial Lecture, UK, 2013.
- Best Poster Award, NIAMS retreat, NIH, 2010.
- Texas A&M Student Research Award, 2007.
- Winner of Innovation-Research Contest, Association of Health Technologies Industry, Canada, 2004.

ORIGINAL *equal contributing authors
PUBLICATIONS

1. **G. Vahedi**, Y. Kanno, Y. Furumoto, K. Jiang, S. Parker, M. Erdos, S. Davis, R. Roychoudhuri, N. Restifo, M. Gadina, Z. Tang, Y. Ruan, F.S. Collins, V. Sartorelli, JJ. O'Shea, "Super-enhancers Delineate Disease-Associated Regulatory Nodes in T Cells", *Nature*, February 2015.
2. R. Roychoudhuri, K. Hirahara, K. Mousavi, D. Clever, Z. Yu, M. Bonelli, G. Sciume, H. Zare, **G. Vahedi**, B. Dema, C. Klebanoff, H. Liu, M. Rao, P. Muranski, J. Crompton, G. Punkosdy, V. Hoffmann, H. Takahashi, E. Wang, F. Marincola, L. Gattinoni, J. Rivera, V. Sartorelli, Y. Kanno, A. Nakamura, A. Muto, K. Igarashi, JJ. O'Shea*, NP. Restifo*, "Bach2 Represses Effector Programmes to Stabilize Treg-mediated Immune Homeostasis", *Nature*, June 2013.
3. **G. Vahedi**, H. Takahashi, S. Nakayamada, HW. Sun, V. Sartorelli, Y. Kanno, JJ. O'Shea, "STATs Shape the Active Enhancer Landscape of T Cell Populations", *Cell*, November 2012.
4. G. Sciume, K. Hirahara, H. Takahashi, A. Laurence, AV Villarino, KL Singleton, SP Spencer, C. Wilhelm C, AC Poholek, **G. Vahedi**, Y. Kanno Y, Y. Belkaid, JJ. O'Shea, "Distinct Requirements for T-bet in Gut Innate Lymphoid Cells", *Journal of Experimental Medicine*. December 2012.

5. K. Hirahara, K. Ghoreschi, XP. Yang, H. Takahashi, A. Laurence, **G. Vahedi**, Y. Kanno, JJ. O'Shea,
"Interleukin-27 Priming of T Cells Controls IL-17 Production In-trans via Induction of the Ligand PD-L1", *Immunity*, July 2012.
6. S. Nakayamada S, Y. Kanno, H. Takahashi, D. Jankovic, KT. Lu, TA. Johnson, HW Sun, **G. Vahedi**, O. Hakim, R. Handon, PL. Schwartzberg, GL. Hager, JJ O'Shea, "Early Th1 Cell Differentiation is Marked by a Tfh Cell-like Transition", *Immunity*, Vol. 35, 919-31, December 2011.
7. XP. Yang, K. Ghoreschi, SM. Steward-Tharp, J. Rodriguez-Canales, J. Zhu, JR. Grainger, K. Hirahara, HW. Sun, L. Wei, **G. Vahedi**, Y. Kanno, JJ. O'Shea, A. Laurence, "Opposing Regulation of the Locus Encoding IL-17 Through Direct, Reciprocal Actions of STAT3 and STAT5", *Nature Immunology*, No. 3, 247-54, March 2011.
8. L. Wei*, **G. Vahedi***, HW. Sun, WT Watford, H. Takatori, HL. Ramos, H. Takahashi, J. Liang, G. Gutierrez-Cruz, C. Zang, W. Peng, JJ. O'Shea, Y. Kanno, "Discrete Roles of STAT4 and STAT6 Transcription Factors in Tuning Epigenetic Modifications and Transcription during T Helper Cell Differentiation", *Immunity*, Vol. 32, No. 6, 840-851, June 2010. *equal contributing authors
9. L. Durant, WT. Watford, HL. Ramos, A. Laurence, **G. Vahedi**, L. Wei, H. Takahashi, HW. Sun, Y. Kanno, F. Powrie, JJ. O'Shea, "Diverse Targets of the Transcription Factor STAT3 Contribute to T Cell Pathogenicity and Homeostasis", *Immunity*, Vol. 32, No. 5, 605-615, May 2010.
10. **G. Vahedi**, B. Faryabi, J.-F. Chamberland, A. Datta, E. R. Dougherty, "Sampling-Rate-Dependent Probabilistic Boolean Networks", *Journal of Theoretical Biology*, vol. 261, no. 4, pp. 463-477, December 2009.
11. **G. Vahedi**, B. Faryabi, J.-F. Chamberland, A. Datta, and E. R. Dougherty, "Optimal Intervention Strategies for Cyclic Therapeutic Methods", *IEEE Transactions on Biomedical Engineering*, Vol. 56, No. 2, 281-291, February 2009.
12. **G. Vahedi**, I. Ivanov, E. R. Dougherty, "Inference of Boolean Networks under Constraint on Bidirectional Gene Relationships", *Journal of IET Systems Biology*, Vol. 3, No. 3, 191202, May 2009.
13. B. Faryabi, **G. Vahedi**, J.-F Chamberland, A. Datta, and E. R. Dougherty, "Intervention in Context- Sensitive Probabilistic Boolean Networks Revisited", *EURASIP Bioinformatics*, Vol. 2009.
14. B. Faryabi, **G. Vahedi**, J.-F Chamberland, A. Datta, and E. R. Dougherty, "Optimal Constrained Stationary Intervention in Gene Regulatory Networks", *EURASIP Bioinformatics*, Vol. 2008.
15. **G. Vahedi**, B. Faryabi, J.-F. Chamberland, A. Datta, and E. R. Dougherty, "Intervention in Gene Regulatory Networks via a Stationary Mean-First-Passage-Time Control Policy", *IEEE Transactions on Biomedical Engineering*, Vol. 55, No. 10, 2319 - 2331, October 2008.
16. B. Faryabi, J.-F. Chamberland, **G. Vahedi**, A. Datta, E. R. Dougherty, "Optimal Intervention in Asynchronous Genetic Regulatory Networks", *IEEE Selected Topics in Signal Processing*, Vol. 2, No. 3, 412-423, June, 2008.
17. **G. Vahedi**, K. Kaler, C. J. Backhouse, "An Integrated Method for Mutation Detection Using On-chip Sample Preparation, Single-stranded Conformation Polymorphism, and Heteroduplex Analysis", *Electrophoresis*, Vol. 25, 2346-2356, July 2004.

REVIEW
ARTICLES

1. **G. Vahedi**, A.C. Richard, JJ. O'Shea, "Enhancing the Understanding of Asthma.", *Nature Immunology*, August 2014.
2. **G. Vahedi**, Y. Kanno, V. Sartorelli, JJ. O'Shea, "Transcription Factors and CD4+ T Cells Seeking Identity: Masters, Minions, Setters and Spikers", *Immunology*, April 2013.
3. **G. Vahedi**, AC. Poholek, TW. Hand, A. Laurence, Y. Kanno, JJ. O'Shea, K. Hirahara, "Helper T Cell Identity and Evolution of Differential Transcriptomes and Epigenomes", *Immunological Reviews*, Vol. 252, March 2013.
4. Y. Kanno, **G. Vahedi**, K. Hirahara, K. Singleton JJ. O'Shea, "Transcriptional and Epigenetic Control of T helper Cell Specification: Molecular Mechanisms Underlying Commitment and Plasticity", *Annual Review of Immunology*, Vol. 30, April 2012.
5. K. Hirahara*, **G. Vahedi***, K. Ghoreschi, XP. Yang, S. Nakayamada, Y. Kanno, JJ. O'Shea, A Laurence, "Helper T-cell Differentiation and Plasticity: Insights from Epigenetics", *Immunology*, Vol. 134, 235-245, November 2011.
6. JJ. O'Shea, R. Lahesmaa, **G. Vahedi**, A Laurence, Y. Kanno, "Genomic Views of STAT Function in CD4+ T Helper Cell Differentiation", *Nature Review Immunology*, Vol. 4, 239-250, April 2011.
7. B. Faryabi, **G. Vahedi**, A. Datta, J.-F. Chamberland, E. R. Dougherty, "Recent Advances in the Control of Markovian Gene Regulatory Networks", *Current Genomics*, vol. 10, no. 7, pp. 540-547, November 2009.

INVITED
TALKS

- Children's Research Institute's International Immunotherapy Conference, Seattle, September 2015.
- Feinstein Institute for Medical Research, New York, April 2014.
- Philip Godfrey Memorial Lecture, Biochemical Society, University of York, UK, July 2013.
- Institute for Immunology, Perelman School of Medicine, University of Pennsylvania, June 2013.
- Bioinformatics Seminar, Electrical Engineering Department, Virginia Tech University, Arlington, VA, February 2013.
- IEEE Workshop on Genomic Signal Processing, Arlington, VA, December 2012.
- NIAMS Retreat, NIH, Bethesda, MD, June 2012.
- NIH Immunology Interest Group (IIG) Retreat, Columbia, MD, September 2011.
- Electrical Engineering Seminar, University of Texas at Dallas, April 2009.

TEACHING
EXPERIENCE

- Guest Lecturer, "Systems Biology of Immune Cells", Immunology 507, University of Pennsylvania, March 2013, February 2014.
- HHMI-sponsored Molecular Biology Workshop for DC High School Teachers, March 2013.
- Guest Lecturer, NIH-University of Pennsylvania Bioinformatics minicourse, 2013.
- Teaching Assistant, Electrical Circuit II, University of Alberta, 2003.
- Teaching Assistant, Microprocessor, University of Alberta, 2002.