

Dana Reichmann, PhD

Department of Molecular, Cellular and Developmental Biology,
University of Michigan

830 N. University, Ann Arbor, MI 48109, USA

Phone: (734) 615 1957 or (734) 757 0511, Fax: 734-615-4226

E-mail: danare@umich.edu

<http://www-personal.umich.edu/~danare/>

Education:

- 2008-present Postdoctoral Scholar and Human Frontiers Research Scholar at the Department of Molecular, Cellular and Developmental Biology, Ann Arbor, MI, USA.
Advisor: Prof. Ursula Jakob
Research in the field of redox regulation, intrinsically disordered chaperones and proteomics
- 2007-2008 Postdoctoral Scholar at the Department of Biological Chemistry, The Weizmann Institute of Science, Israel.
Advisor: Prof. Gideon Schreiber, in collaboration with Prof. Israel Rubinstein (Department of Materials and Interfaces, The Weizmann Institute of Science, Israel.). Research in the field of nanotechnology, focusing on interaction between proteins and inorganic surfaces
- 2002-2007 Ph.D. studies at the Department of Biological Chemistry, The Weizmann Institute of Science, Israel
Advisor: Prof. Gideon Schreiber
Thesis: Protein-Protein Interaction: Architecture and biochemical principles of protein-protein binding sites.
- 2000-2002 M.Sc. studies at the Department of Molecular Genetics, The Weizmann Institute of Science, Israel
Advisor: Dr. Shmuel Pietrokovski
Thesis: Computational analysis of a new methyltransferase family and of the destruction box motif.
- 1995-1998 B.A. Life Science studies at the Tel-Aviv University, Israel

Awards:

- 2009-present Human Frontier Science Program (HFSP) Long-Term Fellowship
- 2009 European Molecular Biology Organization (EMBO) Long-Term Fellowship
- 2008 The Sara Lee Schupf Postdoctoral award
- 2007 The Young Travel Fund of Federation of European Biochemical Societies (FEBS-YTF) grant

2005 The Aharon Kazir award
2005 Protein Society travel award
1998 Wolf Foundation Award for outstanding achievements in the B.Sc. studies

Relevant Employment and Activities:

2009 - present Regional manager of the BioAbroad organization in Michigan, US.
2006 - 2008 Co-organizer of BigRoc, the Bioinformatics and Genome Research Open Club at the Weizmann Institute of Science.
2002 - 2008 Teaching assistant of a course "Introduction to Bioinformatics", Weizmann Institute of Science.
2005 - 2008 Instructor of a project "Researchers in science and technology", Davidson teaching center, Weizmann Institute of Science.
1998 - 2000 Officer of the Chemical and Biological Hazard Estimation, Home Front Command, IDF
1996 - 2000 Research assistant at the Department of Plant Genetics, the Tel-Aviv University. Working with Plant Molecular biology and Sequence analysis techniques.

Professional experience:

1. **Molecular biology, Microbiology and Biochemistry:** protein and enzyme biochemistry; phage display; chaperone biochemistry, microbiology.
2. **Kinetic analysis:** kinetic measurements of protein-protein and protein-peptide interactions using SPR technique (BIAcore and ProteON) and Stopped Flow; involvement in the development of the ProteOnTMXPR36- SPR based biosensor (Bio-Rad, Israel).
3. **Bioinformatics:**
Sequence analysis: protein motif and family identification by using different multiple alignment algorithms.
Protein structural analysis: Protein design and analysis of protein-protein binding interfaces, molecular dynamics; computational mutagenesis, network analysis
Programming in Perl, C; using UNIX environment.
4. **Mass Spectrometry and Proteomics:** protein structure analysis using mass spectrometry methods including peptide mapping and H/D exchange analysis.

Directly invited to review manuscripts for:

BMC Systems Biology
Protein Engineering Design & Selection

International courses:

- 2004 - EMBO practical course on Transient Kinetics Applied to Biological Macromolecules, Kent University, Canterbury, UK.
2011 - Agilent LC/MS Large Molecule Workshop, Wilmington, DE, US

Oral Presentations:

- 2011 - Midwest Stress Response and Molecular Chaperone Meeting, Evanston, IL, US
2010 - ESF-EMBO Conference on Molecular Perspectives on Protein-Protein Interactions, Sant Feliu de Guixols, Spain
2010 - Cold Spring Harbor Meeting on Molecular Chaperones and Stress Responses, NY, US
2007 - Dept. of Biological Chemistry, Weizmann Institute of Science, Rehovot, Israel
2006 - Dept. of Molecular and Cellular Biology, Harvard University, Boston, MA, US
2006 - Dept. of Bioengineering and Therapeutic Sciences, University of California, San Francisco, CA, US
2006 - Burnham Institute of Medical Research, San Diego, CA, US
2006 - Dept. of Chemistry and Biochemistry, University of California, San Diego, CA, US
2006 - BioRad Laboratories, Hercules, CA, US
2005 - The Protein Society 19th symposium, Boston, MA, US
2002 - Dept. of Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel

Poster Presentations:

- D. Reichmann et al., How Do Intrinsically Unfolded Chaperones Work? Gordon Research Conference, Davidson. NC, US, 2010
D. Reichmann et al., Protein-Protein Interactions: Architecture and design of binding sites, FEBS, Seville, Spain 2007
D. Reichmann et al., Design of protein-protein interfaces and the role of interface water in binding, ECCB 5th conference, Eilat, Israel, 2006
D. Reichmann et al., Protein-Protein Interactions: Architecture and design of binding sites, HUPO 5th congress, Long Beach, CA, US, 2006
D. Reichmann et al., Protein-Protein Interactions: Architecture and design of binding sites, Katzir Conference on perspectives on Protein-Protein Interactions, Eilat, Israel 2005
D. Reichmann et al., The modular architecture of protein-protein binding interfaces, The Protein Society 19th symposium, Boston, MA, US, 2005
D. Reichmann et al., The modular architecture of protein-protein binding interfaces, FISEB, Eilat, Israel 2005
D. Reichmann, T. Selzer, S. Albeck, G. Schreiber, Protein-Protein Interaction: From Mechanism to Protein Design, RECOMB, Berlin, 2003
D. Reichmann, S. Pietrokovski, Computational analysis of a new methyltransferase family and of the destruction box motif, AIBS, Rehovot, Israel, 2002

D. Reichmann, S. Pietrokovski, Computational analysis of a new methyltransferase family and of the destruction box motif, FISEB, Eilat, Israel, 2001

Publications:

1. **D. Reichmann**, Y. Xu, CM. Cremers, M. Ilbert, R. Mittelman, MC. Fitzgerald, U. Jakob, Order out of Disorder - Working Cycle of an Intrinsically Unfolded Chaperone (2012), *Cell*, 148(5): 947-957.
The paper is highlighted by the Cell editorial board and previewed by Matthias P. Mayer, *Cell*, 148(5): 947-957
The paper is scheduled for highlighting in the Nature Struct. Molec. Biol. Journal.
News release was published by the UM-RECORD journal.
<http://www.ns.umich.edu/new/releases/20244-it-takes-two-to-tango-pairs-of-entwined-proteins-handle-the-stress>
2. N. Brandes*, **D. Reichmann***, H. Tienson, L. Leichert, U. Jakob. Using quantitative redox proteomics to dissect the yeast redoxome (2011), *J Biol Chem*, 286(48):41893-903
*authors contributed equally
3. O. Cohavi*, **D. Reichmann***, R. Abramovich, A. Tesler, G. Bellapadrona, D. Kokh, R. Wade, A. Vaskevich, I. Rubinstein, G. Schreiber. A quantitative real-time assessment of binding of peptides and proteins to gold surfaces (2010), *Chem-Eur J*, 17(4):1327-36.
*authors contributed equally.
4. CM. Cremers, **D. Reichmann**, J. Hausmann, M. Ilbert, U. Jakob. Unfolding of metastable linker region is at the core of Hsp33 activation as a redox-regulated chaperone (2010) *J Biol Chem*. 285(15):11243-51
5. RL. Rich et al (150 co-authors). A global benchmark study using affinity-based biosensors (2009) *Anal Biochem*, 386(2):194-216 .
6. V. Potapov*, **D. Reichmann***, R. Abramovich, D. Filchtinski, N. Zohar, D. Ben Halevy, M. Edelman, V. Sobolev, and G. Schreiber. Computational redesign of a protein-protein interface using its modular architecture (2008) *J Mol Biol*, 384(1):109-19,
*authors contributed equally.
7. M. Cohen*, **D. Reichmann***, G. Schreiber. Similar chemistry, but different bond preferences for inter versus intra-protein interactions. (2008) *Proteins*, 72(2):741-53.
*authors contributed equally.

8. **D. Reichmann**, Y. Getz, G. Schreiber, On the contribution of water-mediated interactions to protein-complex stability. (2008) *Biochemistry*, 47(3):1051-60.
The paper was chosen as a hot paper by the editorial board.
9. **D. Reichmann**, O. Rahat, M. Cohen, H. Neuvirth, and Schreiber G. The molecular architecture of protein-protein binding sites. (2007) *Curr Opin Struct Biol*, 17:1-10.
10. **D. Reichmann**, M. Cohen, R. Abramovich, D. Lim, Dym O., N.C.J. Strynadka G. Schreiber. Binding hot spots in the TEM1-BLIP interface in light of its modular architecture. (2007) *J Mol Biol*, 365(3):663-79.
11. **D. Reichmann**, O. Rahat, R. Meged, O. Dym, G. Schreiber. The modular architecture of protein-protein binding interfaces. (2005) *Proc Natl Acad Sci USA*. 102(1):57
From the cover. Cited by 141 (according to Google-Scholar)

Publications in preparation:

1. **D. Reichmann**, C. Schmidtke, U. Jakob. Singlet oxygen induces oxidative unfolding that lead to an activation of the redox-regulated chaperone Hsp33 (tentative title).
2. N. Brandes*, H. Tienson*, **D. Reichmann**, A. Lindemann, L. Leichert , V. Vitvisky, R. Banerjee, U. Jakob. Collapse of the cellular redox balance - a key event in chronologically aging yeast.
3. T. Epstein, **D. Reichmann**, R. Kopelman. Fluorescent nano-sensor for the real-time measuring of the oxygen uptake (tentative title).

Edited Books

- U. Jakob and **D. Reichmann**. Oxidative Stress and Redox Regulation, *Springer*, in editing