

Emidio Capriotti PhD

CURRICULUM VITÆ

Name: Emidio Capriotti
Nationality: Italian
Date of birth: February, 1973
Place of birth: Roma, Italy
Languages: Italian, English, Spanish

Positions

Jul 2015	Junior Group Leader: Institute of Mathematical Modeling of Biological Systems, University of Düsseldorf, Düsseldorf, Germany
2012-2015	Assistant Professor: Division of Informatics, Department of Pathology, University of Alabama at Birmingham (UAB), Birmingham (AL), USA.
2011-2012	Marie-Curie IOF: Contracted Researcher at the Department of Mathematics and Computer Science, University of Balearic Islands (UIB), Palma de Mallorca, Spain.
2009-2011	Marie-Curie IOF: Postdoctoral Researcher at the Helix Group, Department of Bioengineering, Stanford University, Stanford (CA), USA.
2006-2009	Postdoctoral Researcher in the Structural Genomics Group at Department of Bioinformatics and Genetics, Prince Felipe Research Center (CIPF) Valencia, Spain.
2004-2006	Contract researcher at Department of Biology, University of Bologna, Bologna, Italy.
2001-2003	Ph.D student in Physical Sciences at University of Bologna, Bologna, Italy.

Visiting

Jun 2012 – Jul 2012	Prof. Frederic Rousseau and Prof. Joost Schymkowitz, VIB Switch Laboratory, KU Leuven, Leuven (Belgium)
May 2009	Prof. Francisco Melo group. Department of Molecular Genetics and Microbiology. Pontificia Universidad Catolica de Chile, Santiago de Chile (Chile).
Jul 2008 - Aug 2008	Prof. Andrej Sali group, Departments of Biopharmaceutical Sciences and Pharmaceutical Chemistry, University of California at San Francisco (UCSF), San Francisco (CA).
Aug 2005 - Nov 2005	Prof. Jeffrey Skolnick group. Center of Excellence in Bioinformatics University at Buffalo, Buffalo (NY)

Education

Sep 2004	Master in Bioinformatics (first level) University of Bologna, Bologna (Italy).
Jun 2004	Ph.D. in Physical Sciences University of Bologna, Bologna (Italy).
Jul 1999	<i>Laurea</i> (B.S.) Degree in Physical Sciences, score 106/110 University of Bologna, Bologna (Italy).

Awards and Grants

Jun 2012 – Jul 2012	Short term EMBO Fellowship for “Computational methods to predict the functional impact of protein variations on alpha-galactosidase and the efficacy of pharmacological chaperone therapy” at KU Leuven, Leuven (Belgium)
Sep 2011 – Aug 2012	Marie-Curie IOF at the Department of Mathematics and Computer Sciences, University of Balearic Islands (UIB).
Sep 2009 – Aug 2011	Marie-Curie IOF at the Helix Group, Department of Bioengineering, Stanford University
Oct 2006 – Aug 2009	Postdoc Research Fellowship. in the Structural Genomics Group at Department of Bioinformatics and Genetics, Prince Felipe Research Center (CIPF) Valencia, Spain
Jul 2008 – Aug 2008	Short-term research fellowship from the Valencian Government (Spain) for the development of a method for RNA structure prediction using MODELLER program. Project supervised by Prof. Andrej Sali, Departments of Biopharmaceutical Sciences and Pharmaceutical Chemistry, University of California, San Francisco (UCSF).
Sep 2004 - Sep 2006	Postdoc Research Fellowship. <i>BioSapiens</i> Network of Excellence, funded by the European Union's VI Framework Programme.
Aug 2005 - Dec 2005	Marco Polo Research Fellowship for “Implementation of new software for protein structure prediction” developed in the Center of Excellence in Bioinformatics University at Buffalo under the supervision of Prof. Jeffrey Skolnick
Jan 2003 - May 2004	National Institute for Biophysics and Biomaterials (INBB) Research Fellowship. Partially supported by MURST (FISR 2002) project <i>Hydrolases from Thermophiles: Structure, Function and Homologous and Heterologous Expression</i> .
Sep 2001 - Sep 2002	SPINNER Consortium (Regione Emilia-Romagna) Research Fellowship for Technology Transfer through a grant to the BioDec project.

Teaching activity

I am course master in two courses in the Graduate Biomedical Science program at UAB and organizer of the CB2 (Computational Biology and Bioinformatics) Journal Club at UAB. During the last academic years he gave the following course:

2013-2014	GBSC 703-01A - Introduction to Scientific Computing, Graduate Biomedical Science Program (30 hours)
2014-2015	GBSC 703-01A - Introduction to Scientific Computing, Graduate Biomedical Science Program (48 hours)
2014-2015	GBSC 703-01E Computational Biology and Bioinformatics, Graduate Biomedical Science Program (40 hours)

I was also contracted professor for the following courses held by Prof. Rita Casadio at the University of Bologna (Italy):

2004-2005	Bioinformatics - Degree in Biotechnology (30 hours)
2003-2004	Laboratory of Biophysics II - Degree in Biotechnology
	Models for Biological Systems - Degree in Biotechnology (90 hours total)
2002-2003	Structural Biochemistry - Degree in Biotechnology (70 hours)
2001-2002	Laboratory of Biophysics II - Degree in Biotechnology (25 hours)

Mentoring activity

Currently I am also co-mentoring the research activity Jaume Sastre Tomàs, PhD student at the Department of Mathematics and Informatics, University of Balearic Islands (Spain).

At the University of Alabama at Birmingham, I was supervising the research activity of one postdoc (Dr. Rui Tian) and one master student (Shivani Viradia).

Previously, I collaborated with Prof. Rita Casadio, Dr Mario Compiani and Dr Marc A. Marti-Renom to mentor the research activity of the following students:

Alberto Stizza	BS thesis in Physical Sciences, Catholic University of Brescia (Italy)
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Daniela Danesi	BS thesis in Physical Sciences, Catholic University of Brescia (Italy)
Maria Procopio	BS thesis in Physical Sciences, University of Bologna (Italy)
Remo Calabrese	PhD thesis in Biotechnology, University of Bologna (Italy)
Giulia Gentile	MS thesis in Bioinformatics, CRS4 Bioinformatics Laboratory Cagliari (Italy)
Stefania Bosi	PhD student, University La Sapienza, Roma (Italy)
Miquel Oltra Sastre	Master thesis, Open University of Catalonia (Spain)

Reviewer activity

I am faculty member of the F1000 Biology in the section of Bioinformatics. I am reviewer for the following journals: Bioinformatics, Briefings in Bioinformatics, Nucleic Acids Research, The American Journal of Human Genetics, PLOS Computational Biology, Scientific Reports, BMC Bioinformatics, PLOS ONE, BMC Genomics, Proteins, Human Mutation, Human Genetics, Human Genomics, Amino Acids, BMC Structural Biology, Database, Current Bioinformatics, Current Protein and Peptide Science, Journal of Bioinformatics and Computational Biology, Neurocomputing, Information Fusion, IEEE/ACM Transactions on Computational Biology and Bioinformatics. I was reviewer of projects for the Medical Research Council of the United Kingdom and for the Austrian Academy of Sciences.

Other scientific activity

I am member of the International Society of Computational Biology (ISCB). I served as co-chair in the organization of the Personal Genomics session at the Pacific Symposium of Biocomputing (PSB) 2011. I was member of the Data Committee in the first edition of the Critical Assessment of Genome Interpretation (CAGI) 2010. From 2011, in collaboration with Yana Bromberg and Hannah Carter, I organized five editions of the VarI-SIG meeting (formerly SNP-SIG) in Vienna (Austria), Long Beach, (California), Berlin (Germany), Boston (Massachusetts) and Dublin (Ireland). With Yana Bromberg I am co-editor of four BMC Genomics special issues publishing selected works among those presented at the VarI-SIG meetings from 2011 to 2014. More information about the VarI-SIG meeting is available at <http://varisig.biofold.org>. In 2013, I was member of the Proceedings Papers Committee for the ISMB/ECCB Conference. In 2015 I was member of the Late Breaking Research Committee for the ISMB/ECCB Conference.

Personal research projects

2009-2012	Marie Curie International Outgoing Fellowships for Career Development, New methods to evaluate the impact of single point protein mutation on human health.
2012	EMBO Short Term Fellowship, Computational methods to predict the functional impact of protein variations on alpha-galactosidase and the efficacy of pharmacological chaperone therapy.
2008	Short-term research fellowship from the Valencian Government (Spain), Development of a method for RNA structure prediction using MODELLER program.
2005	Marco Polo Research Fellowship, Implementation of new software for protein structure protein structure prediction.

Participation in research projects

2015-2017	The pre-BCR CDR-H3 sensing site and H chain selection (NIH: 1R21AI117703-01A1). PI: Harry Schroeder. Role: Co-Investigator.
2014-2015	Mechanisms of glucose mediated cardiac mitochondrial dysfunction (NIH: 3R00HL111322-04S1). PI: Adam Wende. Role: Co-Investigator.
2006-2008	Marie Curie Reintegration Grant - European Union, PI: Dr Marc A. Marti-Renom. RNA Comparative Modeling.
2004-2006	VI Framework Programme - European Union, PI: Dr. Janet Thornton. Biosapiens Network of Excellence, A European Virtual Institute for Genome Annotation.
2003-2004	FISR2002 - Italian Ministry of Education Research and University (MIUR), PI: Prof. Rita Casadio. Hydrolases from Thermophiles: Structure, Function and Homologous and Heterologous Expression.

Research Interests

- Analysis and interpretation of cancer genome.
- Genome interpretation and prediction of disease-related protein mutations.
- Machine learning approaches in molecular biology.
- Protein-protein interactions.
- RNA structure comparison and prediction.
- Protein folding kinetics.

- Prediction of protein stability changes upon mutation.
- Protein structural prediction by threading methods and building by homology.
- Molecular dynamics of protein systems.

Developed Web Servers, Tools and Databases

- **ContrastRank**: probabilistic method for cancer gene prioritization and cancer sample classification.
WEB: <http://snps.biofold.org/contrastrank>
- **DrCancer**: predictor of cancer causing non-synonymous single nucleotide polymorphisms.
WEB: <http://snps.biofold.org/drcancer>
- **I-Mutant1.0**: Neural Network based method to predict the sign of free energy change of proteins upon single point mutation.
WEB: <http://gpcr2.biocomp.unibo.it/cgi/predictors/I-Mutant/I-Mutant.cgi>
- **I-Mutant2.0**: Support Vector Machine based method to predict the sign and the value of free energy change of proteins upon single point mutation.
WEB: <http://folding.biofold.org/i-mutant>
- **K-Fold**: Support Vector Machine based method to predict the mechanism and rate of protein folding kinetic.
WEB: <http://folding.biofold.org/k-fold>
- **Meta-SNP**: Meta-predictor of disease causing variants that uses PANTHER, PhD-SNP, SIFT and SNAP.
WEB: <http://snps.biofold.org/meta-snp>
- **Omidios**: Omidios, a database of pre-calculated likely impact of a Single Nucleotide Polymorphism in the human genome.
WEB: <http://sgt.cnag.cat/services/Omidios/>
- **PhD-SNP**: Support Vector Machine based Method to discriminate between disease-related and neutral mutations in proteins.
WEB: <http://snps.biofold.org/phd-snp>
- **SARA**: a tool for Structural Alignment of Ribonucleic Acids.
WEB: <http://structure.biofold.org/sara>
- **SARA-Coffee**: tool for RNA multiple structural alignment obtained merging SARA and T-Coffee.
WEB: <http://www.tcoffee.org/Projects/saracoffee/>
- **WebRASP**: statistical potential for scoring the quality of RNA three-dimensional structure.
WEB: <http://melolab.org/webrasp>
- **WS-SNPs&GO**: predictor of human disease related mutations in proteins with functional annotation.
WEB: <http://snps.biofold.org/snps-and-go>

International conferences meetings and schools

- XXIII Intelligent Systems for Molecular Biology meeting (ISMB) and XIV European Conference on Computational Biology (ECCB), Dublin (Ireland), 12-14 July 2015
- UAB NHGRI IV Short Course on Next-Generation Sequencing; Technology and Statistical Methods. Birmingham (AL), 15-18 December 2014.
- XIII European Conference on Computational Biology (ECCB), Strasbourg (France), 7-10 September 2014.
- XXII Intelligent Systems for Molecular Biology meeting (ISMB), Boston, Massachusetts (USA), 13-15 July 2014.
- VarI-SIG meeting. Identification and annotation of genetic variants in the context of structure, function, and disease. Boston, Massachusetts (USA), 12 July 2014.
- XXI Intelligent Systems for Molecular Biology meeting (ISMB) and XII European Conference on Computational Biology (ECCB), Berlin (Germany), 21-23 July 2013
- SNP-SIG meeting. Identification and annotation of SNPs in the context of structure, function, and disease. Berlin (Germany), 19 July 2013
- Critical Assessment of Genome Interpretation (CAGI). Berlin (Germany), 17-18 July 2013.
- ESHG Course in Next Generation Sequencing, Bertinoro di Romagna (Italy), 17-20 May 2013
- Summit on Translational Bioinformatics (TBI), San Francisco, California (USA), 18-20 March 2013.
- XX Intelligent Systems for Molecular Biology meeting (ISMB), Long Beach, California (USA), 15-17 July 2012.
- SNP-SIG meeting. Identification and annotation of SNPs in the context of structure, function, and disease. Long Beach, California (USA), 14 July 2012.
- Bologna Winter School 2012 *Proteins and their variants: structure and function prediction*. Bologna (Italy) 13-17 February 2012.
- XIX Intelligent Systems for Molecular Biology meeting (ISMB) and X European Conference on Computational Biology (ECCB), Vienna (Austria), 17-19 July 2011.
- SNP-SIG meeting. Identification and annotation of SNPs in the context of structure, function, and disease. Vienna (Austria), 15 July 2011.
- EMBO Young Scientist Forum. International Institute of Molecular and Cell Biology (IIMCB), Warsaw (Poland), June 30th – July 1st 2011.

- Pacific Symposium on Biocomputing (PSB) 2011. Big Islands, Hawaii January 3-7 2011.
- Critical Assessment of Genome Interpretation (CAGI). University of California at Berkeley. Berkeley, California (USA), 10 December 2010.
- Biomedical Computation at Stanford (BCATS). Stanford University. Palo Alto, California (USA), 6 November 2010.
- Exploring the functional consequences of genomic variation (HGVS meeting), Washington DC (USA), 2 November 2010
- II Workshop on Annotation, Interpretation and Management of Mutations (AIMM) and IX European Conference on Computational Biology (ECCB), Ghent (Belgium), 26-29 September 2010.
- 4th Comprehensive Cancer Research Training Program (CCRTP) at Stanford University, Palo Alto California (USA), 13-17 September 2010.
- 9th International Conference on Computational Systems Bioinformatics (CSB). Stanford, Palo Alto, California (USA), 16-18 August 2010.
- XVIII Intelligent Systems for Molecular Biology meeting (ISMB), Boston (USA), 11-13 July 2010.
- Biomedical Computation at Stanford (BCATS). Stanford University. Palo Alto, California (USA), 7 November, 2009.
- Lipari International Summer School on Bioinformatics and Computational Biology. RNAs: structure, function and therapy. Lipari (ME) 13-20 June, 2009.
- VII European Conference on Computational Biology (ECCB), Cagliari (Italy), 22-26 September 2008.
- Workshop on Applications of Protein Models in Biomedical Research, University of California San Francisco (UCSF), San Francisco (CA) 11-12 July, 2008
- III Course on Molecular Evolution, Phylogenetics and Phylogenomics, Valencia (Spain) 12-16 May 2008.
- Non-Coding RNAs: Computational Challenges and Applications. Antalya (Turkey) 28-30 April 2008.
- XV Intelligent Systems for Molecular Biology meeting (ISMB) and VI European Conference on Computational Biology (ECCB), Vienna (Austria), 21-25 July 2007.
- ISMB 3DSig Satellite Meeting - Structural Bioinformatics and Computational Biophysics, Vienna (Austria), 19-20 July 2007.
- EMBO Workshop: Viral RNA: Structure Function and Targeting. EMBL Heidelberg (Germany) 5-7 March 2007.
- Bologna Winter School 2006. Applied Bioinformatics: The test case of Human Genome. Bologna (Italy), 13-17 February, 2006.
- Bologna Winter School 2005: *How Complex is Functional Genomics?* Bologna (Italy), 13-19 February 2005.
- XII Intelligent Systems for Molecular Biology (ISMB) and III European Conference on Computational Biology meeting (ECCB), Glasgow (Scotland) 31 July – 4 August 2004.
- Bologna Winter School 2004: *The State of the Art of Protein-Protein Interaction Networks. The role of the "in silico" approach*, Bologna (Italy) 8-14 February 2004.
- Meeting Galileo Project. Marseille (France) 27-28 June 2003.
- Bologna Winter School 2003: *Hot Topics in Structural Genomics* Bologna (Italy) 9-15 February 2003.
- Bologna Winter School 2002: *Predicting 3D Structure of Difficult Proteins*. Bologna (Italy) 3-9 February 2002.
- Bologna Winter School 2001: *In Silico Biomolecular Recognition*. Bologna (Italy) 4-10 February 2001.
- Bologna Summer School: *Biotechnology Protein Sequence Analysis in the Genomic Era*. Bologna (Italy) 10-16 October 1999.

National conferences meetings and schools

- UAB Comprehensive Cancer Center, 15th Annual Research Retreat and Research Competition, Birmingham, Alabama (USA), October 29 2012.
- VIII Jornadas de Bioinformatica. Valencia (Spain), 13-15 February 2008.
- VI Meeting on Nucleic Acids and Nucleotides (RANN07), Valencia (Spain), 22-23 November 2007.
- VII Jornadas de Bioinformatica. Zaragoza (Spain), 20-22 November 2006.
- Bioinformatics Italian Society (BITS) Annual Meeting 2006. Bologna (Italy), 28-29 April 2006.
- Bioinformatics Italian Society (BITS) Annual Meeting 2004 Padova (Italy), 26-27 March 2004.
- Workshop Staminal Cells: *Properties and Perspectives*. Bressanone (Italy), 11-13 September 2003.
- XI National School of Biophysics: Biophysics of the Cell. Bressanone (Italy), 8-10 September 2003.
- IX National School of Biophysics: *Biophysics and Biomaterials*. Bressanone (Italy), 3-5 September 2001.
- XXXI National Congress of Physical Chemistry, Padova (Italy), 19-23 June 2001.

Invited talks

07 Aug 2006	Centro de Investigacion Principe Felipe (CIPF), Valencia (Spain)
23 Oct 2007	Centro Nacional de Investigaciones Oncológicas (CNIO), Madrid (Spain)
06 May 2008	Département d'Informatique, Université Libre de Bruxelles (ULB), Bruxelles (Belgium)
23 Apr 2009	Departament de Ciències Matemàtiques i Informàtica, Universitat de les Illes Balears (UIB), Palma de Mallorca (Spain)
27 May 2010	Buck Institute, Novato (California, USA)

02 Jul 2010	Luxembourg Centre for System Biomedicine, Luxembourg University, Luxembourg
20 Sep 2010	Department of Genetics and Bioengineering, Yeditepe University, Istanbul (Turkey)
25 Jan 2011	Department of Medicinal Chemistry and Molecular Pharmacology, Purdue University, Lafayette (Indiana, USA).
18 Feb 2011	Lawrence Berkeley National Laboratory, Berkeley (California, USA).
21 Mar 2011	Department of Computer Sciences, Wayne State University, Detroit (Michigan, USA).
06 Apr 2011	J. Craig Venter Institute, San Diego (California, USA)
22 Apr 2011	Department of Bioengineering, University of Texas at Dallas (Texas, USA)
17 May 2011	Department of Pathology, University of Alabama at Birmingham (Alabama, USA)
26 May 2011	Department of Computer Science, Université Pierre et Marie Curie, Paris (France)
16 Jun 2011	Instituto Gulbenkian de Ciencia, Oeiras (Portugal)
29 Jun 2011	International Institute of Molecular and Cell Biology, Warsaw (Poland)
04 Oct 2011	Institut de Cancerologie Gustave Roussy, Villejuif (France)
06 Oct 2011	Karlsruhe Institute of Technology, Karlsruhe (Germany)
12 Jun 2012	Switch Lab, KU Leuven, Leuven (Belgium)
30 Apr 2013	Biomedical Informatics Day, Adelaide (SA, Australia)
16 Jul 2013	Institute for Medical and Human Genetics, Charité University, Berlin (Germany)
07 Oct 2013	CCNR, Northeastern University, Boston (Massachusetts, USA)
10 Dec 2013	Macromolecular Biochemistry Research Center (CRBM), CNRS, Montpellier (France)
14 Dec 2013	Computational Biology Institute (IBC), CNRS, Montpellier (France)
12 Feb 2014	Institute of Genetics and Molecular and Cell Biology (IGBMC), Strasbourg (France)
22 May 2014	Montpellier Cancer Research Institute, University of Montpellier, Montpellier (France)
06 Aug 2014	Izmir Biomedicine and Genome Center (IBG), Izmir (Turkey)
18 Sep 2014	Technical University of Munich (TUM), Munich (Germany)
26 Sep 2014	Pontificia Universidad Catolica de Chile, Santiago de Chile (Chile)

Invited lectures

01 Sep 2011	Statistics and Genomics Seminar, University of California, Berkeley (California, USA)
17 Feb 2012	Bologna Winter School 2012, Bologna (Italy)
08 Feb 2013	Anatomic Pathology Didactic Conference. University of Alabama at Birmingham (Alabama, USA)
15 Feb 2013	Genetics and Genomics Seminar Series. University of Alabama at Birmingham (Alabama, USA)
04 Mar 2013	GBM-722 Bioinformatics Course. University of Alabama at Birmingham (Alabama, USA)
07 Mar 2013	Biotechnology Professional Master. University of Alabama at Birmingham (Alabama, USA)
22 Apr 2013	GBS Structural Biology Course. University of Alabama at Birmingham (Alabama, USA)
14 May 2013	Laboratory Medicine Seminar. University of Alabama at Birmingham (Alabama, USA)
17 May 2013	European School of Genetic Medicine. European School of Genetic Medicine, Bertinoro (Forlì, Italy)
02 Feb 2014	GBM-722 Bioinformatics Course. University of Alabama at Birmingham (Alabama, USA)
06 Mar 2014	Biotechnology Professional Master. University of Alabama at Birmingham (Alabama, USA)
03 Jul 2014	GBS-758 New Perspectives in Cardiovascular Biology. University of Alabama at Birmingham (Alabama, USA)
08 Oct 2014	Biotechnology Professional Master. University of Alabama at Birmingham (Alabama, USA)
18 Dec 2014	UAB NHGRI IV Short Course on Next-Generation Sequencing; Technology and Statistical Methods. University of Alabama at Birmingham (Alabama, USA)

Publications

I published 29 research articles and 8 reviews in international peer-reviewed journals with impact factor. I also published 14 between book chapters (9) and congress acta (5). Using Google Scholar my papers received 2028 citations (<http://scholar.google.com/citations?user=qAa7Et0AAAAAJ>) corresponding to an h-index of 22. According to Scopus, my papers received 1441 citations (<http://www.scopus.com/authid/detail.url?authorId=8851983500>) corresponding to an h-index of 19. ORCID: 0000-0002-2323-0963. Researcher ID: D-9318-2011.

Papers on international journals with impact factor

Capriotti E, Fariselli P, Rossi I, Casadio R (2004). A Shannon entropy-based filter detects high-quality profile-profile alignments in searches for remote homologues. **Proteins** 54:351-360. (IF: 2.627, Google Citations: 13)

Compiani M, Capriotti E, Casadio R (2004). The dynamics of the minimally frustrated helices determine the hierarchical folding of small helical proteins. **Phys Rev E**. 65:051905-8. (IF: 2.288 Google Citations: 9)

Capriotti E, Fariselli P, Casadio R (2004). A neural network-based method for predicting protein stability changes upon single point mutations. **Bioinformatics**. 20 (Suppl 1):I63-I68. (IF: 4.981, Google Citations: 125)

Stizza A, **Capriotti E**, Compiani M (2005). A minimal model of three-state folding dynamics of helical proteins. **Journal of Physical Chemistry B**, 109: 4215-4226. (IF: 3.302, Google Citations: 2)

Capriotti E, Fariselli P, Casadio R (2005). I-Mutant2.0: predicting stability changes upon mutation from the protein sequence or structure. **Nucleic Acids Research**, 33 Web Server Issue: W306-W310. (IF: 9.112, Google Citations: 355)

Capriotti E, Fariselli P, Calabrese R, Casadio R (2005). Predicting protein stability changes from sequences using support vector machines. **Bioinformatics**, 21 Suppl 2:ii54-ii58. (IF: 4.981, Google Citations: 92)

Capriotti E, Compiani M (2006). Diffusion-Collision of Foldons Elucidates the Kinetic Effects of Point Mutations and Suggests Control Strategies of the Folding Process of Helical Proteins. **Proteins**, 64: 198-209. (IF: 2.627, Google Citations: 2)

Grandi F, Sandal M, Guarguaglini G, **Capriotti E**, Casadio R, Samori B (2006). Hierarchical mechanochemical switches in Angiostatin. **ChemBiochem**, 7: 1774-1782. (IF: 3.082, Google Citations: 18)

Capriotti E, Calabrese R, Casadio R. (2006). Predicting the insurgence of human genetic diseases associated to single point protein mutations with Support Vector Machines and evolutionary information. **Bioinformatics**, 22; 2729-2734. (IF: 4.981, Google Citations: 231)

Capriotti E*, Casadio R (2007). K-Fold: a tool for the prediction of the protein folding kinetic order and rate. **Bioinformatics**, 23; 385-386. (IF: 4.981, Google Citations: 43)

Capriotti E, Arbiza L, Casadio R, Dopazo J, Dopazo H, Marti-Renom MA (2008). The use of estimated evolutionary strength at the codon level improves the prediction of disease related protein mutations in human. **Human Mutation**, 29; 198-204. (IF: 5.144, Google Citations: 33)

Capriotti E, Marti-Renom M. (2008). RNA structure alignment by a unit-vector approach. **Bioinformatics**, 24; i112-i116. (IF: 4.981, Google Citations: 38)

Capriotti E, Fariselli P, Rossi I, Casadio R. (2008). A three-state prediction of single point mutations on protein stability changes. **BMC Bioinformatics**. 9 (Suppl 2); S6. (IF: 2.576, Google Citations: 106)

Calabrese R, **Capriotti E**, Fariselli P, Martelli PL, Casadio R (2009) Functional annotations improve the predictive score of human disease-related mutations in proteins. **Human Mutations**, 30; 1237-1244. (IF: 5144, Google Citations: 212)

Capriotti E, Marti-Renom M (2009) SARA: a server for function annotation of RNA structures. **Nucleic Acids Research**. 37 (Web Server issue); W260-W265. (IF: 9.112, Google Citations: 32)

Capriotti E, Marti-Renom MA. (2010). Quantifying the relationship between sequence and three-dimensional structure conservation in RNA. **BMC Bioinformatics**. 11; 322. (IF: 2.576, Google Citation: 22)

Baù D, Sanyal A, Lajoie BR, **Capriotti E**, Byron M, Lawrence JB, Dekker J, Marti-Renom MA (2011). The three-dimensional folding of the α -globin gene domain reveals formation of chromatin globules. **Nature Structure & Molecular Biology**. 18; 107-114. (IF: 13.309, Google Citation: 121)

Capriotti E, Norambuena T, Marti-Renom MA, Melo F. (2011). All atom knowledge-based potential for RNA structure prediction and assessment. **Bioinformatics**. 27; 1086-1093. (IF: 4.981, Google Citation: 20)

Capriotti E*, Altman RB. (2011). Improving the prediction of disease-related variants using protein three-dimensional structure. **BMC Bioinformatics**. 12 (Suppl 4); S3. (IF: 2.67, Google Citation: 31)

Capriotti E*, Altman RB. (2011). A new disease-specific machine learning approach for the prediction of cancer-causing missense variants. **Genomics**. 98; 310-317. (IF: 2.284, Google Citation: 26)

Dewey FE, Chen R, Cordero SP, Ormond KE, Caleshu C, Karczewski KJ, Whirl-Carrillo M, Wheeler MT, Dudley JT, Byrnes JK, Cornejo OE, Knowles JW, Woon M, Sangkuhl K, Gong L, Thorn CF, Hebert JM, **Capriotti E**, David SP, Pavlovic A, West A, Thakuria JV, Ball MP, Zaranek AW, Rehm HL, Church GM, West JS, Bustamante CD, Snyder M, Altman RB, Klein TE, Butte AJ, Ashley EA. (2011). Phased whole-genome genetic risk in a family quartet using a major allele reference sequence. **PLOS Genetics** 7; e1002280. (IF: 7.528, Google Citation: 70)

Kemena C, Bussotti G, **Capriotti E**, Marti-Renom MA, Cedric Notredame C. (2013). Using tertiary structure for the computation of highly accurate multiple RNA alignments with the SARA-Coffee package. **Bioinformatics**. 29:1112-1119. (IF: 4.981, Google Citation: 4)

Capriotti E*, Calabrese R, Fariselli P, Martelli PL, Altman RB, Casadio R*. (2013). WS-SNPs&GO: a web server for

predicting the deleterious effect of human protein variations using functional annotation. **BMC Genomics**. 14 (Suppl 3): S6. (IF: 3.986, Google Citation: 9)

Capriotti E*, Altman RB, Bromberg Y*. (2013) Collective judgment predicts disease-associated single nucleotide variants. **BMC Genomics**. 14 (Suppl 3): S2. (IF: 3.986, Google Citation: 20)

Norambuena T, Cares JF, **Capriotti E**, Melo F (2013). WebRASP: a server for computing energy scores to assess the accuracy and stability of RNA 3D structures. **Bioinformatics**. 29: 2649-2650. (IF: 4.981, Google Citation: 1)

Li B, Seligman C, Thusberg J, Miller JL, Auer J, Whirl-Carrillo M, **Capriotti E**, Klein TE, Mooney SD. (2014). In silico comparative characterization of pharmacogenomic missense variants. **BMC Genomics**. 15 (Suppl 4): S4. (IF: 3.986, Google Citation: 2)

Di Tommaso P, Bussotti G, Kemena C, **Capriotti E**, Chatzou M, Prieto Barja P, Notredame C. (2014). SARA-Coffee web server, a tool for the computation of RNA sequence and structure multiple alignments. **Nucleic Acids Research**. 42 (Web Server Issue): W356-W360. (IF: 9.112)

Tian R, Basu MK, **Capriotti E***. (2014). ContrastRank: a new method for ranking putative cancer driver genes and classification of tumor samples. **Bioinformatics**. 30: i572-i578. (IF: 4.981, Google Citation: 3)

Beerten J, Van Durme J, Gallardo R, **Capriotti E**, Serpell L, Schymkowitz J and Rousseau F (2015). WALTZ-DB: a benchmark database of amyloidogenic hexapeptides. **Bioinformatics**. 31:1698-1700. (IF: 4.981, Google Citation: 1)

Reviews on international journals with impact factor

Fariselli P, Rossi I, **Capriotti E**, Casadio R (2007). The WWWH of remote homolog detection: The state of the art. **Briefings in Bioinformatics**, 8; 78-87. (IF: 9.617, Google Citations: 27)

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