

CURRICULUM VITAE – Claudia Andreini

Claudia Andreini born in Florence on March 19th, 1977 (Italian nationality)

Mother of three children, Caterina (date of birth: 03/04/2009),

Eleonora and Sebastiano (date of birth: 08/01/2013)

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● EDUCATION AND POSITIONS

- July 2002: **Degree in Chemistry (110/110 cum laude)**, Faculty of Sciences, University of Florence (Italy); Supervisor: Prof. Ivano Bertini
- January 2006: **PhD in Chemical Sciences**, Faculty of Sciences, University of Florence (Italy); Thesis title: “Computational biology applied to metalloproteins: *in silico* prediction and characterization”; Supervisor: Prof. Lucia Banci
- May 2006: Participation at the *4th BioSapiens European School in Bioinformatics* in Oeiras (Portugal)
- January 2006- November 2010: **Post-doctoral fellowship**, Faculty of Sciences, University of Florence (Italy); Research program: “Bioinformatics studies on metalloproteins” (First career break within this period – see the dedicated section)
- October 2006-January 2007: **Visiting scientist at the European Bioinformatics Institute** (Hinxton), group of Janet Thornton
- December 2010- June 2019: **Associate Researcher** at the Department of Chemistry, Faculty of Sciences, University of Florence (Italy); Research program: “Bioinformatics for bioinorganic chemistry” (Second career break within this period – see the dedicated section)
- 2013: **Qualified to cover the role of Associate Professor** by a nation-wide evaluation process aimed at selecting, through rigorous criteria based on track records, the scientists to be called as Professors in Italian Universities.
- July 2013: **Qualified to cover the role of teacher of Mathematics and Sciences at the Italian junior high school** through Tirocinio Formativo Attivo.
- 2014-2019: **Teacher of Mathematics and Sciences at the Italian junior high school**
- Since July 2019: **Associate Professor at the Department of Chemistry**, Faculty of Sciences, University of Florence (Italy)

● FELLOWSHIPS

- April 2010: **National grant “FIRB - Futuro in Ricerca”** with a project entitled “Bioinformatics in bioinorganic chemistry: construction of a public database to gather and organize knowledge on metalloproteins, and development of methodologies and software for their analysis” (**505.000 euro** for three years)
- 2018: **National grant FFABR**, “Finanziamento delle attività base di ricerca” (**3.000 euro**)
- 2018-2019: **University grant “Bando di finanziamento di progetti competitivi per RTD”** with a project entitled “Computational chemistry of metalloproteomes to shed light on zinc ions in biology” (**40.000 euro** for two years)
- Since 2019: **Grant from “Fondazione CR Firenze”** with a project entitled “Caratteristiche strutturali dei siti metallici nelle macromolecole biologiche e loro impatto sui processi cellulari e la salute umana” (**30.000 euro** for two years)

● SUPERVISION OF GRADUATE STUDENTS

- December 2010- December 2013: **1 PhD student, 1 postdoc**
- January 2012- January 2015: **1 PhD student**
- January 2017- January 2020: **1 PhD student**
- Now: **2 postdocs**

- **TEACHING ACTIVITIES**

- 2004: Tutor of the Intensive Summer Course **Bioinorganic Chemistry and Applications**, University of Ioannina (Greece)
- 2006: Course of **Structural Bioinformatics** held within the International Doctorate in Structural Biology, Faculty of Sciences, University of Florence (Italy)
- 2006-2008: Lectures given within the course of **General and Inorganic Chemistry**, Degree Course in Chemistry, Faculty of Sciences, University of Florence (Italy)
- 2008-2009: Lectures given and member of the examination board within the course of **Inorganic Chemistry II**, Degree Course in Chemistry, Faculty of Sciences, University of Florence (Italy)
- Since 2009: Lectures given and member of the examination board within the course of **Superior Inorganic Chemistry**, Degree Course in Chemistry, Faculty of Sciences, University of Florence
- Since 2011: Lectures given within the course of **Structure and reactivity of metalloproteins**, Faculty of Sciences, University of Florence (Italy)
- Since 2011: Course of **Laboratory of General and Inorganic Chemistry** held within the Degree Course in Chemistry, Faculty of Sciences, University of Florence (Italy)
- 2011: **Course of Life Sciences within Summer Session School** organized by Regione Toscana
- 2013-2014: Post-degree course of **Laboratory of Chemistry within “Percorsi Abilitanti Speciali”** (Special qualifying courses) for qualification as a High School teacher in Italy
- 2014: Course of **Script languages** held within the International Doctorate in Structural Biology, Faculty of Sciences, University of Florence (Italy)
- 2016: Course in **Bioinformatics** held within the International Doctorate in Structural Biology, Faculty of Sciences, University of Florence (Italy)
- 2014-2015: Post-degree course in **Chemistry within “Tirocinio Formativo Attivo”** (Special qualifying course) for qualification as a High School teacher in Italy
- 2017-2018: Post-degree course in **Didactics of Chemistry within “PF24”** for qualification as a High School teacher in Italy
- Since 2019-2020: Course of **Didactics of Chemistry** held within the Degree Course in Chemistry, Faculty of Sciences, University of Florence (Italy)
- Since 2019-2020: Course of **Chemistry** held within the Degree Course in Sciences of Primary Education, Faculty of Human and Educational sciences, University of Florence (Italy)

- **INSTITUTIONAL RESPONSIBILITIES**

- Since 2013: PhD student advisor
- Since 2010: **Faculty member**, Faculty of Sciences, University of Florence, Italy
- 2010-2019: **Member of the Board of Teachers of the International Doctorate in Structural Biology**, Faculty of Sciences, University of Florence, Italy
- Since 2017: **Member of the Scientific Council of CERM** – University of Florence
- Since 2018: Member of the **committee for the orientation of new students** at the University of Florence
- Since 2020: Member of the **committee for the post degree course PF24** of the University of Florence

- **COMMISSIONS OF TRUST**

Reviewer for several biochemistry and bioinformatics journals including *Nucleic Acids Research*, *Bioinformatics*, *BMC Bioinformatics*, *Journal of Biological Inorganic Chemistry*, etc.

- **MAJOR COLLABORATIONS**

- 2006-2007: **Paolo Frasconi group**, Development of neural networks for predicting zinc sites in protein sequences, Department of Systems and Informatics, Faculty of Engineering (*University of Florence, Italy*)
- 2006-2007: **Nigel J. Robinson group**, *In silico* analysis of a family of metal sensors responsible for the activation of cellular systems of metal detoxification (*University of Durham, UK*)
- Since 2005: **Barbara Ensoli group**, *In silico* characterization of the interaction between Tat and Env proteins involved in the entry mechanism of HIV virus (*Superior Institute of Health, Rome, Italy*)
- Since 2006: **Janet Thornton group**, Development of methods for the structure-based classification and functional characterization of metal sites within metalloenzymes, (*European Bioinformatics Institute EMBL-EBI, Hinxton, UK*)
- 2016-2017: **Christos Chasapis**, Application of bioinformatics methods for metalloproteome prediction of *Tetrahymena thermophile* (*University of Patras – Greece*)
- 2017-2018: **Salvatore Bozzaro group**, Application of bioinformatics methods for metalloproteome prediction of *Tetrahymena thermophile* (*University of Turin – Italy*)
- Since 2018: **David Eide group**, Application of bioinformatics methods for zinc-proteome prediction of *Saccharomyces cerevisiae* (*University of Wisconsin-Madison – USA*)
- Since 2018: **David Giedroc group**, Application of bioinformatics methods for zinc-proteome prediction of *Acinetobacter baumannii* (*Indiana University – USA*)
- Since 2019: **Frédéric Barras group**, Analysis of ISC, SUF machineries for iron-sulfur biogenesis in bacterial organisms (*Institut Pasteur - France*)
- Since 2020: **Ricardo O. Louro**, Analysis of multi-heme proteins evolution (*ITQB-NOVA – Portugal*)
- Since 2020: **Sameer Velankar**, Integration between MetalPDB and PDBE-KB (*European Bioinformatics Institute EMBL-EBI, Hinxton - UK*)
- Since 2020: **Sabeeha Mercant**, Application of bioinformatics methods for metalloproteome prediction of Plants (*Berkeley University– USA*)
- Since 2020: **Paola Picotti**, Metalloprotein *in-silico* annotation of experimentally determined metalloproteomes (*ETH Zurich– Switzerland*)

● ORAL PRESENTATIONS AND INVITED LECTURES

Claudia Andreini has presented her research in several oral presentations, including **seminars at the European Bioinformatics Institute (EMBL-EBI) and the University College London (UCL)**. She has also been invited to give the following lectures:

- September 2006: **Conference of the Italian Chemical Society** (Lecture title: “Identification of metalloproteins in the genomes and their functional annotation”) – (Firenze) Italy
- August 2007: 3rd BioXAS Study Weekend on Metalloproteomics within the **9th International Conference on Biology and Synchrotron Radiation** (Lecture title: “Search of metalloproteins in proteomes: a bioinformatic approach”) – Paris (France)
- August 2011: **Summer Session School on ICT and Life Sciences** organized by the Regional Administration of Tuscany (Lecture Title: “ICT frontiers in Life Sciences”) – Pisa (Italy)
- March 2012: Keekoff meeting of BiomedBridges European project – Hinxton (UK)
- September 2016: **Conference of the Italian Chemical Society** (Lecture title: “Bioinformatics of iron-sulfur proteins”) – Verona (Italy)
- August 2017: **18th International Conference on Biological Inorganic Chemistry** (Lecture title: “Bioinformatics resources to study metals in biology”) – Florianopolis (Brazil)
- May 2018: **13th National Seminar for Vertical Curriculum** (Lecture Title: “Didattica della Chimica: una proposta di approccio laboratoriale”) – Firenze (Italy)
- June 2018: **COST meeting** “The Biogenesis of Iron-sulfur proteins: from cellular biology to molecular aspects (FeSBioNet) (Lecture title: “Bioinformatics of iron-sulfur proteins”) – Zagreb (Croatia)

- September 2019: **TIMB3 meeting** “Twin to illuminate metal in biology and biocatalysis through biospectroscopy” (Lecture title: “Bioinformatics of metalloproteins”) – Carcavelos (Portugal)
- April 2020: **Fe-S Proteins - Biogenesis, Regulation and Function Conference** – (Lecture title: “Bioinformatics for studying iron-sulfur proteins“ - San Tropez (France) (Postponed due to Coronavirus Emergency)
- 2th December 2021: **5th Workshop. Engage with your future for Marie-Curie Ph.D. students of RNAct ITN project** – (Lecture title: “Teaching science” – Firenze (Italy)

- **CAREER BREAKS**

- From February 4th, 2009 to July 2nd, 2009: maternity leave (**5 months**)
- From November 13th, 2012 to May 14th, 2013: maternity leave (**6 months**)

- **PUBLICATIONS**

Claudia Andreini is author of:

- **45 publications** in peer-reviewed international scientific journals
- 2 conference proceedings
- **Two book chapters**
 - **In the Encyclopedia of Metalloproteins** edited by Springer (2013)
 - **In Transition Metals and Sulfur – A Strong Relationship for Life" (MILS-20)** edited by De Gruyter (2020)

- **IMPACT OF HER SCIENTIFIC CONTRIBUTIONS (Data taken from Scopus):**

- h-index: **29**
- Total number of citation: **4735**
- **638 citations in 2021**
- Average citations per paper: **more than 100**
- **Corresponding author of 7 papers**
- **10 papers** with more than 100 citations

- **5 SELECTED PAPERS (citations from Google Scholar):**

- **Andreini C**, Banci L, Bertini I, Rosato A. *Counting the zinc-proteins encoded in the human genome. J Proteome Res.* 2006; 5(1):196-201
- **Andreini C**, Bertini I, Cavallaro G, Holliday GL, Thornton JM. *Metal ions in biological catalysis: from enzyme databases to general principles. J Biol Inorg Chem.* 2008; 13(8):1205-18 (**selected by F1000**)
- **Andreini C**, Rosato A., Banci L. *The relationship between environmental dioxygen and iron sulfur proteins explored at the genome level PLoS One.* (2017); Jan 30;12(1):e0171279
- J Wang, ZR Lonergan, G Gonzalez-Gutierrez, BL Nairn, CN Maxwell, Zhang Y, **Andreini C**, Karty JA, Chazin WJ, Trinidad JC, Skaar EP, Giedroc DP, *Multi-metal restriction by calprotectin impacts de novo flavin biosynthesis in Acinetobacter baumannii. Cell chemical biology* (2019); 26 (5), 745-755. e7
- M Varadi et.al. *PDBe-KB: collaboratively defining the biological context of structural data. Nucleic Acid Research*

Claudia Andreini is the **CORRESPONDING AUTHOR** of these papers as well:

- **Andreini C**, Cavallaro G, Lorenzini S, *FindGeo: a tool for determining metal coordination geometry. Bioinformatics.* 2012 Jun 15;28(12):1658-60

- **Andreini C**, Cavallaro G, Rosato A, Valasatava Y, *MetalS²: a tool for the structural alignment of minimal functional sites in metal-binding proteins and nucleic acids*. **J Chem Inf Model**. 2013; 53(11):3064-75
- **Andreini C**, Cavallaro G, Lorenzini S; Rosato A, *MetalPDB: A database of metal sites in biological macromolecular structures*. **Nucleic Acids Research (Database Issue)** 2013; 41: D312-D319
- **Andreini C**, Cavallaro G, Rosato A, Valasatava Y, *MetalS³, a database-mining tool for the identification of structurally similar metal sites* **J Biol Inorg Chem**. (2014); 19(6): 937-45
- Valasatava Y, Rosato A., Banci L, **Andreini C** *MetalPredator: a web server to predict iron–sulfur cluster binding proteomes* **Bioinformatics** (2016); 32 (18), 2850-2852
- Valasatava Y, Furnham N, Rosato A, Thornton JM, **Andreini C**. *To what extent do structural changes in catalytic metal sites affect enzyme function?* **J Inorg Biochem**. (2018); 179:40-5
- Rosato A, Putignano V, Banci L, **Andreini C**. *MetalPDB in 2018: a database of metal sites in biological macromolecular structures* **Nucleic Acids Res**. (2018); Jan 4;46(D1):D459-D464

A complete list of publications is available at

https://scholar.google.it/citations?user=b_vQmt0AAAAJ&hl=it