

Dr Filippo Prischi - CV

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Employment History

Jun 2015 – Present: **Lecturer in Biochemistry and Group Leader** (Tenured Mar 2018).
University of Essex, School of Biological Sciences, Colchester, UK.

May 2010 – May 2015: **Postdoctoral Researcher.**
Department of Life Sciences, Imperial College London, London, UK.
The project I worked on focused on gaining structural and mechanistic insights into components of the Unfolded Protein Response (UPR). My work clearly showed that the level of phosphorylation of the sensor protein IRE1 is directly proportional to its RNase activity, which indicates that targeting the kinase domain with classic kinase inhibitors is an effective way to modulate the entire protein activity - *Group Leader: Dr Maruf Ali.*

Mar 2008 – Apr 2010: **Research Assistant.**
Division of Molecular Structure, NIMR-MRC (now The Francis Crick Institute), London, UK - *Group Leader: Professor Annalisa Pastore.*

Qualifications

Jul 2017: **Fellow of the Higher Education Academy (FHEA)**
The fellowship is a professional recognition accredited by the Higher Education Academy and is mapped against the UK Professional Standards Framework (UKPSF).

Nov 2013: **Executive Education in Project Management**
University College London (UCL), London, UK.
The course is based on the Association for Project Management's Body of Knowledge and offers an effective grounding in project management.

Oct 2005 – Feb 2010: **Ph.D. Biochemistry** – Joint project National Institute for Medical Research - MRC (now The Francis Crick Institute) (London, UK) and University of Siena (Siena, Italy) – *Supervisors: Professor Annalisa Pastore & Professor Neri Niccolai.*

Oct 2005 – Dec 2006: Department of Molecular Biology, University of Siena, Siena, Italy
Jan 2007 – Feb 2010: Division of Molecular Structure, NIMR-MRC (now The Francis Crick Institute), London, UK.
Dissertation: "Biophysical studies of protein interaction"
My Ph.D. project focused on the study of Frataxin, a human protein related to the progressive neurodegenerative disease Friedreich's ataxia. My work contributed to show that CyaY is not merely an iron chaperon, but an integral part of the Isc machinery, able to inhibit the formation of 2Fe2S clusters by acting on the desulfurase enzyme.

Nov 2003 – Sep 2005: **2 years M.Sc. Molecular and Cell Biology (110 summa cum laude)** – *Supervisor: Professor Neri Niccolai.* University of Siena, Siena, Italy.
Dissertation: "Nuclear Magnetic Resonance study of proteins aggregation process".

Sep 2000 – Nov 2003: **B.Sc. Biological Sciences (110 summa cum laude)** – *Supervisor: Professor Neri Niccolai.* University of Siena, Siena, Italy.
Dissertation: "Molecular modeling of S1 and S2 subunits of SARS coronavirus spike glycoprotein".

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Grants and Awards

- Sept 2017 - Aug 2019** Wellcome Trust: *Seed Awards in Science* (£99,825.00) – Understanding how RSKs regulate Transcription Factors in Triple Negative Breast Cancer (205767/Z/16/Z).
- Dec 2017** X-Chem Diamond Light Source (*nominal value* £76,752.00) Targeting hnRNPA1 for the treatment of Small Cell Lung Cancer.
- Feb 2019 - Jan 2022** Leverhulme Trust: *Research Grant* (£237,494.31) - Flipping the switch; regulating protein synthesis in response to stress. Co-i - Dr Bechtold (University of Essex).
- 2013** Imperial College: *Support for professional development grant* (£500).
- 2012** Biochemical Society: *Travel grant* (£650).
- 2007** EMBO: *Short-Term Fellowship* (£5,236.64).
- 2007** British Council: *Italy-UK collaboration grant* (£2,500)

Teaching & Supervision

- 2017 – Present** Module Supervisor "BS281 Protein Bioinformatics" (University of Essex).
- 2015 – Present** Module Supervisor "BS131 Biochemistry of Macromolecules" (University of Essex).
- 2013 – 2015** Tutor "Biological Chemistry Tutorial" 1st year BSc Biochemistry (Imperial College London).
- 2013 – 2014** Tutor "Protein and Enzymes Tutorial" 1st year BSc Biochemistry (Imperial College London).
- 2012 – 2013** Tutor "Engineering, Expression, Purification and Structural Analysis Tutorial" 2nd year BSc Biochemistry (Imperial College London).
- 2005 – 2009** Lecturer "Laboratory of Bioinformatics" 3rd year BSc Biotechnology (University of Siena).

- I am supervising two PhD students at University of Essex and co-supervising one PhD student at Imperial College London.
- I am supervising one Master by Dissertation and two MSc Molecular Medicine students at University of Essex.
- Coordinator of an ERASMUS+ project between the School of Biological Sciences (University of Essex) and the Department of Biotechnology, Chemistry and Pharmacy (University of Siena, Italy).
- I have supervised to successful completion ten final year BSc students (University of Essex).
- I have supervised to successful completion two MSc students (University of Essex).
- I have co-supervised to successful completion five MRes Cancer Biology students (Imperial College London).
- I am a trained tutor for the "Research Skills Development Course" organized by Imperial College Graduate School.

Publications

1. Chrysostomou, S.*, Roy, R. *, **Prischi, F.***, Chapman, K., Mufti, U., Peach, R., Ding, L., Mauri, F., Bellezza, G., Cagini, L., Barbareschi, M., Ferrero, S., Abrahams, J.M., Pascoe, J., Billingham, L., Cullen, M., Hroudá, D., Winkler, M., Klug, D.R., Yaliraki, S.N., Barahona, M., Aboagye, E., Wang, Y., Ali, M.M., Seckl, M.J., Pardo, O.E. "Targeting RSK4 prevents both chemoresistance and metastasis in lung and bladder cancer". *in submission*.
2. Paps, J., Guijarro, C., Trezza, A., **Prischi, F.** "Evolution of Ribosomal Kinase". *in submission*
3. **Prischi, F.** & Pastore, A. "Hybrid methods in iron-sulfur cluster biogenesis". *Frontiers in Molecular Biosciences*. 4, 12 (2017).
4. Zabet, N. R., Catoni, M., **Prischi, F.**, Paszkowski, J. "DNA methylation of specific CpG sites directs the establishment and maintenance of CpHpG methylation". *Nucleic Acid Research*. gkw1330 (2017).

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5. **Prischi, F.** & Pastore, A. "Application of nuclear magnetic resonance and hybrid methods to structure determination of complex systems". *Advances in Experimental Medicine and Biology*. 896:351-368 (2016).
6. Carrara, M., **Prischi, F.**, Nowak, P., Ali, M.M. "Crystal Structures of Perk Luminal Domains Reveal Transient Tetramer State Important for ER Stress Signaling". *EMBO Journal*. 34(11):1589-600 (2015).
7. Popovic, M., Sanfelice, D., Pastore, C., **Prischi, F.**, Temussi, P.A., Pastore, A. "Selective observation of the disordered import signal of a globular protein by in-cell NMR: The example of frataxins". *Protein Science*. 24(6):996-1003 (2015).
8. Carrara, M., **Prischi, F.**, Nowak, P., Kopp, M.C., Ali, M.M. "Noncanonical binding of BiP ATPase domain to Ire1 and Perk is dissociated by unfolded protein CH1 to initiate ER stress signaling". *eLife*. 4:e03522 (2015).
9. **Prischi, F.**, Nowak, P., Carrara, M., Ali, M.M. "Phosphoregulation of human Ire1 RNase splicing activity". *Nature Communication*. 5, 3554 (2014).
10. Carrara, M., **Prischi, F.**, Ali, M.M. "UPR signal activation by luminal sensor domains". *International Journal of Molecular Sciences*. 14(3):6454-66 (2013)
11. Bernini, A., Spiga, O., Venditti, V., **Prischi, F.**, Botta, M., Croce, G., Tong, A.P., Wong, W.T., Niccolai, N. "The use of a ditopic Gd(III) paramagnetic probe for investigating α -bungarotoxin surface accessibility". *Journal of Inorganic Biochemistry*. 112:25-31 (2012)
12. **Prischi, F.**, Konarev, P.V., Iannuzzi, C., Pastore, C., Adinolfi, S., Martin, S.R., Svergun, D.I., Pastore, A. "Structural bases for the interaction of frataxin with the central components of iron-sulphur cluster assembly". *Nature Communication*. 1, 95 (2010).
13. **Prischi, F.**, Pastore, C., Carroni, M., Iannuzzi, C., Adinolfi, S., Temussi, P., Pastore, A. "Of the vulnerability of orphan complex proteins: the case study of the E. coli IscU and IscS proteins". *Protein Expression and Purification*. 73(2):161-6 (2010).
14. **Prischi, F.**, Giannini, C., Adinolfi, S., Pastore, A. "The N-Terminus of human frataxin is an intrinsically unfolded region". *FEBS J*. 276(22):6669-76 (2009).
15. Adinolfi, S., Iannuzzi, C., **Prischi, F.**, Pastore, C., Iametti, S., Martin, S.R., Bonomi, F., Pastore, A. Bacterial frataxin "CyaY is the gatekeeper of iron-sulfur cluster formation catalyzed by IscS". *Nat Struct Mol Biol*. 16(4):390-6 (2009).
16. Bernini, A., Venditti, V., Spiga, O., Ciutti, A., **Prischi, F.**, Consonni, R., Zetta, L., Arosio, I., Fusi, P., Guagliardi, A., Niccolai, N. "NMR studies on the surface accessibilità of the archaeal protein Sso7d by using TEMPOL and Gd(III)(DTPA-BMA) as paramagnetic probes". *Biophys Chem*. 137(2):71-5 (2008).
17. Venditti, V., Bernini, A., De Simone, A., Spiga, O., **Prischi, F.**, Niccolai, N. "MD and NMR studies of alpha-bungarotoxin surface accessibility". *Biochem Biophys Res Commun*. 356(1):114-7 (2007).
18. Spiga, O., Padula, M.G., Scarselli, M., Ciutti, A., Bernini, A., Venditti, V., **Prischi, F.**, Falciani, C., Lozzi, L., Bracci, L., Valensin, P.E., Caudai, C., Niccolai, N. "Structurally driven selection of human hepatitis C virus mimotopes". *Antivir Ther*. 11(7):917-22 (2006).
19. Bernini, A., Spiga, O., Venditti, V., **Prischi, F.**, Bracci, L., Tong, A.P., Wong, W.T., Niccolai, N. "NMR studies of lysozyme surface accessibility by using different paramagnetic relaxation probes". *J Am Chem Soc*. 128(29):9290-1(2006).
20. Bernini, A., Spiga, O., Ciutti, A., Venditti, V., **Prischi, F.**, Governatori, M., Bracci, L., Lelli, B., Pileri, S., Botta, M., Barge, A., Laschi, F., Niccolai, N. "NMR studies of BPTI aggregation by using paramagnetic relaxation reagents". *BBA*. 1764(5):856-62 (2006).
21. Bernini, A., Spiga, O., Venditti, V., **Prischi, F.**, Bracci, L., Huang, J., Tanner, J.A., Niccolai, N. "Tertiary structure prediction of SARS coronavirus helicase". *Biochem Biophys Res Commun*. 343(4):1101-4 (2006).
22. Spiga, O., Bernini, A., Ciutti, A., Chiellini, S., Menciasci, N., Finetti, F., Causarone, V., Anselmi, F., **Prischi, F.**, Niccolai, N. "Molecular modelling of S1 and S2 subunits of SARS coronavirus spike glycoprotein". *Biochem Biophys Res Commun*. 310(1):78-83 (2003).

Presentations at Conferences

1. **Prischi, F.** "The black sheep of the p90 ribosomal kinase family: RSK4" EEMaX symposium, Colchester, December 20th 2016.
2. **Prischi, F.** "Interaction of BiP and ER stress transducers is disrupted by unfolded proteins causing UPR activation" *16th International MST Meeting*, NanoTemper HQ, Munich (Germany), June 18th-19th 2015.
3. **Prischi, F.**, Carrara, M., Ali, M.M. "Phosphoregulation of human Ire1 RNase splicing activity" *Centre for Structural Biology Open Day*, Imperial College London, June 6th 2014.
4. **Prischi, F.**, Carrara, M., Ali, M.M. "Phosphoregulation of human Ire1 RNase splicing activity" *Molecular Chaperones & Stress Responses*, Cold Spring Harbor Laboratory, Cold Spring Harbor (NY), April 29th-May 5th 2014.
5. **Prischi, F.** "Biochemical and Biophysical characterization of c-IRE1 α " *OPPF-MPL HTP Protein Production and Crystallization*, Harwell Research Complex, March 30th-April 7th 2011.
6. **Prischi, F.** "Insights into the structure of an IscS/IscU/CyaY complex" *Frataxin meeting*, NIMR/MRC, London, May 7th-8th 2010.
7. **Prischi F**, Pastore C, Iannuzzi C, Martin S, Adinolfi S, Pastore A. Understanding the iron-sulphur cluster machinery: Characterization of the E. coli IscS/IscU complex. *IIX CCPN meeting*, University of Cumbria, Penrith, 5-7 August 2008.
8. **Prischi F**, Niccolai N, Pastore A. Key features of EF-HAND superfamily structure using paramagnetic probe. *XXXVII National NMR Congress*, Verbania Pallanza, Lago Maggiore, 12-15 September 2007.
9. **Prischi F**, Bernini A, Venditti V, Spiga O, Tong AP, Wong WT, Niccolai N. Dimerization of α -bungarotoxin monitored by paramagnetic probes: a new approach for protein-protein interaction studies. *XXXVI National NMR Congress*, Vietri sul Mare (SA), 20-23 September 2006.

Research Expertise

PROTEIN CHEMISTRY

- Chromatographic and Electrophoretic techniques;
- Expression of recombinant proteins in both bacterial and insect cells;
- Purification of recombinant proteins for biophysical and structural studies;
- Isolation of post-translationally modified proteins.

MOLECULAR BIOLOGY

- Recombinant DNA techniques;
- RT-PCR and qPCR.

BIOPHYSICS

- UV/Vis and CD spectroscopy;
- Fluorescence spectroscopy;
- ITC, DSF, SPR and MST.

NMR

- Acquisition and analysis of multidimensional NMR spectra of proteins for structural and dynamics studies;
- Protein surface studies using a

combination of paramagnetic probes and hydration NMR spectra;

- in-cell NMR.

X-RAY CRYSTALLOGRAPHY

- Screening of crystallization conditions using crystal screen reagent kits, TTP Labtech's mosquito LCP and Crystal Gryphon Protein Crystallography System;
- Optimization of crystallization conditions;
- Synchrotron data acquisition;
- Data analysis and structure refinement;
- X-Chem.

BIOINFORMATICS

- Homology, threading and ab initio modeling;
- Molecular analysis/visualization;
- Macromolecular docking;
- Molecular dynamics.
- Deep knowledge of operative systems (Windows, Linux, Mac) and software packages (Microsoft Office, Adobe Corel Draw, EndNote, Origin, Prism).

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Public Engagement

- I am a STEM ambassador registered with STEM Learning.
- I am involved, in partnership with the local community, in “Café Scientifique” the Essex off-campus public engagement forum.
- Education Outreach with Essex Children’s University and local primary and secondary schools, and promotion of awareness of multidisciplinary science research through 3rd year honours school-based projects at Essex.
- I am collaborating with SienaBioGrafIX (<http://www.sbxlab.org/>), a cultural association specialized in the production of scientific multimedia.

Professional societies & Esteem factors

- Since 2016** East of Anglia and South-East coordinator of the *Association of Italian Scientists in the UK (AISUK)*
- Since 2016** Member of the *British Biophysical Society (BSS)*.
- Since 2010** Member of the *Biochemical Society*.
- Since 2017** Review Editor for *Frontiers in Molecular Biosciences*.
- Since 2017** Reviewer of BBSRC grants.
- Since 2016** External MSD and PhD examiner.
- 20th Dec 2016** Organised the *5th EEMaX Annual Symposium* at University of Essex, Colchester, UK.

Media & Social Network

- Personal Website** <https://filippoprishilab.org/contact/>
- University Webpage** <https://www.essex.ac.uk/people/PRISC89105/filippo-prischi>
- Orcid** <https://orcid.org/0000-0003-2107-938X>
- Google Scholar** <https://scholar.google.co.uk/citations?hl=en&user=j8hfZGIAAAAJ>
- Loop** <https://loop.frontiersin.org/people/196472/overview>
- Research Gate** https://www.researchgate.net/profile/Filippo_Prischi
- Publons** <https://publons.com/author/1319076/filippo-prischi#profile>
- LinkedIn** <https://www.linkedin.com/in/filippo-prischi-63331056/>
- Twitter** <https://twitter.com/ThePrischiGroup>
- AISUK** <https://www.aisuk.org/testimonials/>