

THEODORA SIDERI-CV

Assistant Professor, Faculty of Medicine, University of Thessaly
Visiting Scientist, The Francis Crick Institute
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RESEARCH INTERESTS

Role of N6-methyladenosine (m6A) in mRNA life such as decay, protein synthesis, export during hypoxia in cancer cells, RNA-binding proteins, gene expression, splicing

CURRENT POSITION, since November 2024

Assistant Professor of Biochemistry, Faculty of Medicine, University of Thessaly
Visiting Scientist, The Francis Crick Institute, London, UK

RESEARCH EXPERIENCE

- **The Francis Crick Institute**
June 2023-October 2024, Principal Laboratory Research Scientist (PLRS) & October 2015- June 2023, Senior Laboratory Research Scientist (SLRS)
Group Leader: Dr Folkert van Werven
 - ✚ Role of N6-methyladenosine in mRNA decay and protein synthesis in yeast meiosis
 - ✚ Responsible for group management
- **2011-2015, Postdoctoral Scientist, Group Leader: Professor Jurg Bahler, Department of Genetics, Evolution and Environment, University College London**
 - ✚ Genome-wide studies in ageing using fission yeast as model organism
 - ✚ Identification of prions in *Schizosaccharomyces pombe*
- **2011 (7 months), Postdoctoral Scientist, Group Leader: Dr Damian Crowther, Department of Genetics, University of Cambridge**
Studies of the prion-like character of Alzheimer's disease in *Drosophila Melanoganster*
- **2008-2011, Postdoctoral Scientist, Group Leader: Professor Christopher Grant, Faculty of Life Science, University of Manchester**
Prion induction during oxidative stress in budding yeast
- **2007-2008 (6 months), Postdoctoral Scientist, Group Leader: Professor Simon Avery, Faculty of Medicine and Health Sciences, University of Nottingham**
Protein aggregation, oxidative stress, metal toxicity in budding yeast

EDUCATION

- **PhD in Life Science, Faculty of Medicine and Health Sciences, University of Nottingham, 2003-2007**
Title: “Role of MSR activity and protein aggregation in metal toxicity in yeast”. Supervisor: Dr Simon Avery
- **Master of Research (MRes), University of Ulster, Northern Ireland, UK. Grade: 68.8%, 2002-2003**
Title: “Purification and characterization of an alkaline phosphatase enzyme from the thermotolerant yeast strain *Kluyveromyces marxianus* IMB3”. Supervisors: Prof Geoffrey McMullan and Dr Nigel Ternan.
- **BSc Chemistry, Department of Chemistry, University of Ioannina, 1996-2000, Grade 6.75 (outstanding 10)**

STUDENTSHIPS-AWARDS

- **Prize for one for the best publications of the year from University of Manchester for my publication in PNAS with Title: “Ribosome associated peroxiredoxins suppress oxidative stress-induced de novo formation of the [PSI⁺] prion in yeast”** επιλέχθηκε απο το Faculty of Life Sciences, Παν/μιο του Μάνστεστερ ως μία απο τις καλύτερες δημοσιεύσεις της χρονιάς (2010) με χρηματικό βραβείο
- **PhD studentship from University of Nottingham**
- **MRes Studentship from University of Ulster**
- **Funding from Genetics Society (UK) for 1 undergraduate student**

STUDENT SUPERVISION -TEACHING

- 10 undergraduates and 4 postgraduate (2 MSc and 2 MRes) students at UCL and Manchester Universities
- 2 1-year internships for undergraduate students at the Crick
- Day to day supervision of PhD students
- Lab practicals, University of Nottingham
 - ✚ Environment and Physiology of Microorganisms
 - ✚ Enzyme Kinetics
- Lecturing in Biochemistry at UCL

PUBLIC ENGAGEMENT ACTIVITIES

- **ROYAL SOCIETY SUMMER SCIENCE EXHIBITION 2012, 3-8 July**
Exhibit: Healthy Ageing
- **“Meet A Scientist” at the Crick, 2 hour sessions (4):** showcasing our research and answering questions from the public
- **Chemistry experiments and construction of electronic circuits to primary school students at the Crick** (two 3h-sessions)

RESEARCH PROGRAMS

1. **2003-2008**, PhD Studentship, **University of Nottingham**
Funding from **US National Institutes of Health** (Grant number R01 GM57945), Principal Investigator: Professor Simon Avery. Title: “***Studies on metal toxicity in yeast***”.
2. **2008-2011**, Postdoc, **University of Manchester**
Funding from **Wellcome Trust** (Grant number 083792/Z/07/Z), Principal Investigator: Professor Christopher Grant, Title: “***Functional analysis of the yeast Tsa1 peroxiredoxin***”
3. **2011**, **University of Manchester**
The work from my 2-first author publications (first author in PNAS and JBC, Postdoc in Manchester) resulted in obtaining further funding from **BBSRC** (Grant number BB/J000191/1). Title: “***Induction of yeast prions by reactive oxygen species***”, Principal Investigator: Professor Christopher Grant.
4. **2011-2015**, Postdoctoral Research, **UCL**.
Funding from **Wellcome Trust**, Senior Investigator Award (grant number 095598/Z/11/Z). Title: “***Non-coding RNA function in genome regulation and cell maintenance***” στον καθηγητή Professor Jurg Bahler.
5. **2011-2015**, Postdoctoral Research, **UCL**.
Funding from **BBSRC**, Senior Investigator Award (grant number BB/I012451/1). Title: “***Identification of genetic factors affecting cellular ageing in fission yeast***”, Principal Investigator: Professor Jurg Bahler.
6. **2015-2024**, **The Francis Crick Institute**. Core funded by:
 -  **Wellcome Trust**
 -  **Medical Research Council**
 -  **CRUK**

CONFERENCES

- **Theodora Sideri, Ilias Mylonis, Georgia Chachami, Panagiotis Liakos, George Simos, Folkert van Werven.** (June 2024) Regulation of the Cellular Response to Hypoxia by N⁶-methyladenosine. *HypoxEU* (poster presentation & flash talk)
- **Sideri T.C., Varier, R. A., Capitanchik C., Manova Z., Calvani E., Rossi A., Edupuganti R. R., Ensink I., Chan V. W. C., Patel H., Kirkpatrick J., Faull p., Snijders A., Vermeulen, M., Ralser m., Ule j., Luscombe M. N., and van Werven F. J.** (June 2022) N6-methyladenosine (m6A) reader Pho92 is recruited co-transcriptionally and couples translation efficacy to mRNA decay to promote meiotic fitness in yeast. *Translation UK, Sheffield* (poster presentation)
- **Sideri T.C., Varier, R. A., Capitanchik C., Manova Z., Calvani E., Rossi A., Edupuganti R. R., Ensink I., Chan V. W. C., Patel H., Kirkpatrick J., Faull p., Snijders A., Vermeulen, M., Ralser m., Ule j., Luscombe M. N., and van Werven F. J.** (September 2021) N6-methyladenosine (m6A) reader Pho92 couples translation efficacy to mRNA decay to promote meiosis in yeast. *Protein Synthesis and Translational*

Control-EMBL conference, virtual attendance (poster presentation)

- **Sideri T.C., Varier, R. A., Capitanchik C., Manova Z., Calvani E., Rossi A., Edupuganti R. R., Ensink I., Chan V. W. C., Patel H., Kirkpatrick J., Faull p., Snijders A., Vermeulen, M., Ralser m., Ule j., Luscombe M. N., and van Werven F. J.** (July 2019) N6-methyladenosine (m6A) reader Pho92 role in translation to promote meiotic fitness in yeast. *Translation UK, Glasgow* (poster presentation)
- **The Epitranscriptome**, April 2018, EMBL Conference, Heidelberg, Attended
- **Sideri, T.C., Varier , R. A., Edupuganti, R. R., Ralser M., Ule j., and van Werven F. J.** (June 2016) N6-methyladenosine (m6A) during yeast meiosis. *British Yeast Group Meeting, Swansea* (poster presentation)
- **Sideri, T., Rallis, C., Bitton, D. A., Lages, B. M., Suo, F., Rodriguez-Lopez, M., Du, L. L., Bähler, J.** (August 2013). Parallel Profiling of Fission Yeast Deletion Mutants for Proliferation and for Lifespan During Long-Term Quiescence. *The Biology of Ageing -Gordon Conference* (poster presentation)
- **Sideri, T., Rallis, C., Bitton, D. A., Lages, B. M., Suo, F., Rodriguez-Lopez, M., Du, L. L., Bähler, J.** (July 2013). Parallel Profiling of Fission Yeast Deletion Mutants for Proliferation and for Lifespan During Long-Term Quiescence. *Pombe 2013 -EMBO Conference, London* (poster presentation)
- **Sideri, T. C., Koloteva-Levine, N., Tuite, M. F., & Grant, C. M.** (May 2011). Methionine oxidation of Sup35 protein induces formation of the [PSI⁺] prion in a yeast peroxiredoxin mutant. *Mechanisms of Protein Aggregation in Ageing and Disease-FASEB Meeting, Snowmass Village, Colorado* (poster presentation)
- **Sideri, T. C., Stojanovski, K., Tuite, M. F., & Grant, C. M.** (May 2010). Ribosome associated peroxiredoxins suppress the formation of prions in yeast. *Molecular Chaperones and Stress Responses Meeting 2010, Cold Spring Harbor Laboratory, New York* (poster presentation).
- **Sideri, T. C., Willetts, S. A., Avery, S. V.** (September 2006). Influence of methionine sulfoxide reductase (MSR) activity on Cu resistance and Fe-S cluster integrity in *Saccharomyces cerevisiae*. *Annual British Mycological Society (BMS) scientific meeting, University of Birmingham, UK* (oral presentation).
- **Sideri, T. C., Summer, E. R., Shanmuganathan, A., Willets A. S., Houghton, J. E., & Avery, S. V.** (September 2005). Oxidative damage to proteins causes chromium toxicity in yeast. *Annual British Mycological Society (BMS) scientific meeting, University of Manchester, UK* (oral presentation).
- **Sideri, T. C., Sumner, E. R., Shanmuganathan, A., Willetts, S. A., Houghton, J. E., and Avery S. V.** (April 2005). Oxidative damage to proteins causes chromium toxicity in yeast. *Annual British Yeast Group meeting, University of Kent, UK.* (poster presentation).
- **Sideri, T. C., Willetts, S. A. and Avery, S. V.** (September 2004). Altered metal

homeostasis in protein methionine sulfoxide reductase-deficient *Saccharomyces cerevisiae*. *Annual British Mycological Society (BMS) scientific meeting: Fungi in the environment, University of Nottingham, UK* (poster presentation).

PAPER REVIEWING

Add hoc reviewer for the following journals: Journal of Cell Science, Applied and Environmental Microbiology, Genetics, Journal of Biological Chemistry, Frontiers in Microbiology, PLOS one

PUBLICATIONS

1. Kociemba J, Jørgensen ACS, Tadić N, Harris A, Sideri T, Chan WY, Ibrahim F, Ünal E, Skehel M, Shahrezaei V, Argüello-Miranda O, van Werven FJ.(2024) Multi-signal regulation of the GSK-3 β homolog Rim11 controls meiosis entry in budding yeast. *EMBO J.* 43:3256-3286

2. Ensinnck I., Maman A., Albihlal W., Lassandro M., Giulia Salzano, Sideri T., Howell S., Calvani E., Patel H., Bushkin G., Ralser M., Snijders A. P., Skehel M, Casañal A., Schwartz S., van Werven F. J. (2023) The yeast methylation complex is conserved yet configured differently with m6A-dependent and independent roles. *eLife*, 25:12:RP87860

3. Varier R. A.*, Sideri T.C.*, Capitanchik C.*, Manova Z., Calvani E., Rossi A., Edupuganti R. R., Ensinnck I., Chan V. W. C., Patel H., Kirkpatrick J., Faull P., Snijders A., Vermeulen, M., Ralser M., Ule J., Luscombe M. N., and van Werven F. J. (2022) N6-methyladenosine (m6A) reader Pho92 is recruited co-transcriptionally and couples translation efficacy to mRNA decay to promote meiotic fitness in yeast *eLife*, 11:e84034

***Contributed equally, joint first authors**

4. Ensinnck I, Sideri T., Modic M., Capitanchik C., Vivori C., Toolan-Kerr P., van Werven F. J. (2023) m6A-ELISA, a simple method for quantifying N6-methyladenosine from mRNA populations *RNA*, 29:705-712

5. Wu A., Vivori C., Patel H, Sideri T., Moretto, F., van Werven F. J.RSC mediated nucleosome positioning and GRFs form barriers in promoters to limit divergent noncoding transcription. *Life Sci Alliance*, 5(12):e202201394

6. Dierks D., Garcia-Campos M.A., Uzonyi A., Safra M., Edelheit S., Rossi A., Sideri T., Varier R.A., Brandis A., Stelzer Y., van Werven F., Scherz-Shouval R., Schwartz S. (2021) Multiplexed profiling facilitates robust m6A quantification at site, gene and sample resolution. *Nat Methods*. 18:1060-1067

7. Leger A., Amaral P.P., Pandolfini L., Capitanchik C., Capraro F., Miano V., Migliori V., Toolan-Kerr P., Sideri T., Enright A.J., Tzelepis K., van Werven F.J., Luscombe N.M., Barbieri I., Ule J., Fitzgerald T., Birney E., Leonardi T., Kouzarides T. (2021) RNA modifications detection by comparative Nanopore direct RNA sequencing. *Nat Commun*. 12:7198.

8. Sideri T., Yashiroda Y., Ellis D. A., Rodríguez-López M., Yoshida M., Tuite M. F., Bähler J. (2017) The copper transport-associated protein Ctr4 can form prion-like epigenetic determinants in *Schizosaccharomyces pombe*. *Microbial Cell*, 4 :16-28

9. Jeffares, D. C., Rallis, C., Rieux, A., Speed, D., Převorovský, M., Mourier, T., Marsellach- Castellví, F. X., Iqbal, Z., Lau, W., Cheng, T., Pracana, R., Muelleder, M., Lawson, J., Chessel, A., Bala, S., Hellenthal, G., O'Fallon, B., Keane, T., Simpson, J. T., Bischof, L., Tomiczek, B., Bitton, D., Sideri, T., Codlin, S., Hellberg, J., Trigt, L., Jeffery, L., Atkinson, S., Thodberg, M., Febrer, M., McLay, K., Drou, N., Brown, W., Hayles, J., Salas, R. E. C., Ralser, M., Maniatis, N., Balding, D. J., Balloux, F., Durbin, R., Bähler, J. (2015) The Genomic and Phenotypic Diversity of *Schizosaccharomyces pombe*. *Nature Genetics*. **47**:235-241
10. Sideri, T., Rallis, C., Bitton, D. A., Lages, B. M., Suo, F., Rodriguez-Lopez, M., Du, L. L., Bähler, J. (2015). Parallel Profiling of Fission Yeast Deletion Mutants for Proliferation and for Lifespan During Long-Term Quiescence. *G3 (Bethesda)*. **5**: 145-155
11. Ibstedt, S., Sideri, T. C., Grant, C. M., & Tamas, M. J. (2014). Global analysis of protein aggregation in yeast during physiological conditions and arsenite stress. *Biol Open* **3**:913-23.
12. Jacobson, T., Navarrete, C., Sharma, S. K., Sideri, T. C., Ibstedt, S., Priya, S., Grant, C. M., Christen, P., Goloubinoff, P. & Tamas, M. J. (2012). Arsenite interferes with protein folding and triggers formation of protein aggregates in yeast. *J. Cell Sci.* **125**:5073-83.
13. Alhebshi, A, Sideri T. C., Holland, S. L., & Avery S. V. (2012). The essential iron-sulfur protein Rli1 is an important target accounting for inhibition of cell growth by reactive oxygen species. *Mol. Biol. Cell.* **23**: 3582-90.
14. Sideri, T. C., Koloteva-Levine, N., Tuite, M. F., Grant, C. M. (2011). Methionine oxidation of Sup35 protein induces formation of the [PSI⁺] prion in a yeast peroxiredoxin mutant. *J. Biol. Chem.* **286**:38924-31.
15. Sideri, T. C., Stojanovski, K., Tuite, M. F., & Grant, C. M. (2010). Ribosome associated peroxiredoxins suppress oxidative stress-induced de novo formation of the [PSI⁺] prion in yeast. *Proc. Natl. Acad. Sci. USA*, **107**: 6394-6399.
16. Sideri, T. C., Willets, A. S., & Avery S. V. (2009) Methionine sulphoxide reductases protect iron-sulphur clusters from oxidative inactivation in yeast. *Microbiology*. **155**: 612-623.
17. Holland, S, Lodwig E., Sideri, T. C., Clarke, I., Gkargkas, K., Hoyle, D. C., Delneri, D., Oliver, S. G., Avery, S. V. (2007) Application of the comprehensive set of heterozygous yeast deletion mutants to elucidate the molecular basis of cellular chromium toxicity. *Genome Biology*. **8**: R268
18. Summer, E. R., Shanmuganathan, A., Sideri, T. C., Willets A. S., Houghton, J. E., & Avery, S. V. (2005). Oxidative protein damage causes chromium toxicity in yeast. *Microbiology*. **151**, 1939-1948.

