

Pınar Pir, Assistant Professor

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Education

Boğaziçi University

Department of Chemical Engineering : Ph.D., 2001 - 2005
Department of Chemical Engineering : M.Sc., 1998 - 2001
Department of Chemical Engineering : B.Sc., 1993 - 1998

İstanbul Atatürk Highschool of Science, 1990 – 1993

Experience

Gebze Technical University, Department of Bioengineering

Assistant Professor, October 2015 – present

Babraham Institute, Signalling ISP: Le Novère Group

Senior Research Associate, October 2012 – October 2015

University of Cambridge, Cambridge Systems Biology Center: SG Oliver Group

Research Associate, April 2012 – September 2012

BioSyntha Technology Lim. (Novacta Biosystems Lim., Industrial Biotechnology Team)

Bioinformatician: Metabolic modelling of microorganisms of biotechnological importance
April 2011 – March 2012

University of Cambridge, Cambridge Systems Biology Center: SG Oliver Group

Research Associate, September 2007 – March 2011

Teaching

Systems Biology Module, September 2009 – January 2010

Elementary Mathematics for Biologists, January 2008

University of Manchester, Faculty of Life Sciences: SG Oliver Group

Research Associate, January 2006 – August 2007

Research on respiration metabolism of yeast cells, Summer 2004

Research on respiration metabolism of yeast cells, Summer 2003

Boğaziçi University, Department of Chemical Engineering

Teaching and Research Assistant

Coordination of Unit Operations Laboratories, 2001 – 2004

Teaching assistant of various undergraduate and graduate courses, 1998 – 2005

Training in Industry

Carlo Erba Pharmaceuticals, Istanbul, Summer 1997

Ciba Pharmaceuticals, Istanbul, Summer 1996

Unilever – Elida Cosmetics, Istanbul, Summer 1995

Honours

PhD Thesis Award (Institute for Graduate Studies in Science and Engineering - Boğaziçi University) – 2006

4th rank among 1.2 million attendants in Central Entrance Test for Universities (ÖSS Sayısal) – 1993

97th rank among 60 thousand attendants in Central Entrance Test for Highschools of Science – 1990

Projects

TÜBİTAK ARDEB 1001 - 120S987 - PI - Reconstruction of 3D mathematical models of tumors and their microenvironments - Budget is under approval process as of December 2020

TÜSEB 2019-TA-01 - 3936 - PI - Identification of rare cell types in tumour samples and investigation of their prognostic potential - 15/05/2020 - 15/05/2022

TÜBİTAK ARDEB 1001 - 116S388 - PI - Mathematical Modelling and Improvement of Reprogramming and Differentiation Processes of Induced Pluripotent Stem Cells - 01/05/2017 - 01/05/2020

TÜBİTAK ARDEB 1003 - 216S489 - Researcher - Creation of dormancy models of non-small cell lung carcinoma and investigation of its etiopathogenesis using omics methods - 15/12/2017-15/12/2020

TÜBİTAK BİDEB 2232 - 116C062 - PI - New generation biofuel production via modelling of metabolic pathways and carbon assimilation in Eubacterium limosum strains - 01/05/2016 - 01/05/2018

Teaching

BENG 215/MBG 624 /BSB501 Python

BENG 311/MBG 430 /BSB615 Biostatistics

BENG 458 Bioinformatics and Systems Biology Laboratory (half term)

BSB 621 Systems Biology of Stem Cells and Cell Fate

BSB 625 Advanced Modelling in Systems Biology

Publications

- Ak, E., & Pir, P. (2020). Transcriptional response of signalling pathways to SARS-CoV-2 infection in normal human bronchial epithelial cells. *bioRxiv*.
- Karakurt, H. U., & Pir, P. (2020). Integration of transcriptomic profile of SARS-CoV-2 infected normal human bronchial epi-thelial cells with metabolic and protein-protein interaction networks. *Turkish Journal of Biology*, 44(3), 168.
- Çakır, B., M. Prete, N. Huang, S. van Dongen, P. Pir, V.Y. Kiselev, (2020) Comparison of visualization tools for single-cell RNAseq data, *NAR Genomics and Bioinformatics*, Vol. 2, Issue 3,, lqaa052, <https://doi.org/10.1093/nargab/lqaa052>
- Çakır, T., Kökrek, E., Avşar, G., Abdik, E., & Pir, P. (2019) “Next-Generation Genome-Scale Models Incorporating Multilevel ‘Omics Data: From Yeast to Human” In *Yeast Systems Biology* (pp. 347-363). Humana, New York, NY.
- Jantsch, M.F., Quattrone, A., O’Connell, M., Helm M., Frye M., Pir, P., Macias-Gonzales, M., Ohman M., et al. ,2018, "Positioning Europe for the EPITRANSCRIPTOMICS challenge." *RNA biology* 1-3.
- Malek, M., Kielkowska, A., Chessa, T., Anderson, K.E., Barneda, D., Pir, P., Nakanishi, H., Eguchi, S., Koizumi, A., Sasaki, J. and Juvin, V., Kiselev, V.Y., Niewczas, I, Gray, A., Valayer, A., Spensberger, D., Imbert, M., Felisbino, S., Habuchi, T., Beinke, S., Cosulich, S., Le Novère, L., Sasaki, T., Clark, J, Hawkins, P.T., Stephens, L.R., 2017. “PTEN Regulates PI (3, 4) P 2 Signaling Downstream of Class I PI3K”, *Molecular Cell*, 68 (3), 566-580.
- Waltemath, D. J.R. Karr, F.T. Bergmann, V. Chelliah, M. Hucka, M. Krantz, W. Liebermeister, P. Mendes, C.J. Myers, P. Pir, B. Alaybeyoglu, N.K. Aranganathan, K. Baghalian, A.T. Bittig, P.E. Pinto Burke, M. Cantarelli, Y.H. Chew, R.S. Costa, J. Cursons, T. Czauderna, A.P. Goldberg, H.F. Gomez, J. Hahn, T. Hameri, D.F.H. Gardiol, D. Kazakiewicz, I. Kiselev, V. Knight-Schrijver, C. Knupfer, M. Konig, D. Lee, A. Lloret-Villas, N. Mandrik, J.K. Medley, B. Moreau, H. Naderi-Meshkin, S.K. Palaniappan, D. Priego-Espinosa, M. Scharm, M. Sharma, K. Smallbone, N.J. Stanford, J-H. Song, T. Theile, M. Tokic, N. Tomar, V. Tour´e, J. Uhlenhof, T.M. Varusai, L.H. Watanabe, F. Wendland, M. Wolfien, J.T. Yurkovich, Y. Zhu, A. Zardilis, A. Zhukova, and F. Schreiber, 2016, "Toward community standards and software for whole-cell modeling." *IEEE Transactions on Biomedical Engineering* 63.10: 2007-2014.
- Pir, P. and N. Le Novère, “Mathematical Models of Pluripotent Stem Cells: At the Dawn of Predictive Regenerative Medicine”, 2016, in *Systems Medicine: Methods and Protocols*, Springer 1368, 351-361.
- Kell, D.B., N. Swanston, P. Pir, S.G. Oliver, 2015, “Membrane transporter engineering in industrial biotechnology and whole cell biocatalysis”, *Trends in Biotechnology*, 33, 237-246.
- Alcasabas, A. A. , P. I. Darley , P. Pir, 2014 , “Novel Yeast Strains”, US patent WO2014102201 A1
- Castrillo, J. I., P. Pir, S. G. Oliver, 2013, “Chapter 18 - Yeast Systems Biology: Towards a Systems Understanding of Regulation of Eukaryotic Networks in Complex Diseases and Biotechnology“, in *Handbook of Systems Biology: Concepts and Insights*, 343-365, Academic Press.

Publications - continued

- Dikicioğlu D., S. Öç, B. M. Rash, W. B. Dunn, P. Pir, D. B. Kell, B. Kırdar, S. G. Oliver, 2014, “Yeast cells with impaired drug resistance accumulate glycerol and glucose”, *Molecular BioSystems*, 10, 93-102.
- Alcasabas A. A. , M. de Clare , P. Pir, S. G. Oliver, 2013, “Control analysis of the eukaryotic cell cycle using gene copy-number series in yeast tetraploids”, *BMC Genomics*, 14, 744.
- Smallbone K., H. L. Messiha, K. M. Carroll, C. L. Winder, N. Malys, W. B. Dunn, E. Murabito, N. Swainston, J. O. Dada, F. Khan, P. Pir, E. Simeonidis, I. Spasić, J. Wishart, D. Weichart, N. W. Hayes, D. Jameson, D. S. Broomhead, S. G. Oliver, S. J. Gaskell, J. E. G. McCarthy, N. W. Paton, H. V. Westerhoff, D. B. Kell, P. Mendes, 2013, “A model of yeast glycolysis based on a consistent kinetic characterisation of all its enzymes“, *FEBS Letters*, 587, 17, 2832-2841.
- Dikicioğlu D., P. Pir, S. G. Oliver, 2013, “Predicting complex phenotype–genotype interactions to enable yeast engineering: *Saccharomyces cerevisiae* as a model organism and a cell factory”, *Biotechnology Journal*, 8, 9, 1017-1034.
- Bilsland E., A. Sparkes, K. Williams, H. J. Moss, M. de Clare, P. Pir, J. Rowland, W. Aubrey, R. Pateman, M. Young, M. Carrington, R. D. King, S.G. Oliver, 2013, “Yeast-based automated high-throughput screens to identify anti-parasitic lead compounds”, *Open Biology*, 3,2.
- Müller M., F. Capuano, P. Pir, S. Christen, U. Sauer, S. G. Oliver, M. Ralser, 2012, “A prototrophic deletion mutant collection for yeast metabolomics and systems biology”, *Nature Biotechnology*, 30, 12, 1176-1178.
- Pir P., A. Gutteridge, J. Wu, B. Rash, D.B. Kell, N. Zhang, S.G. Oliver, 2012, “The genetic control of growth rate: A systems biology study in yeast”, *BMC Systems Biology*, 6,4
- Carroll, K. M. , D. M. Simpson, C. E. Eysers, C. G. Knight, P. Brownridge, W. Dunn, C. L. Winder, K. Lanthaler, P. Pir, N. Malys, D. B. Kell, S. G. Oliver, S. J. Gaskell, R. J. Beynon, 2011, “Absolute quantification of a metabolic pathway in yeast: deployment of a complete QconCAT approach”, *Molecular and Cellular Proteomics*, 10,12.
- Lanthaler, K., E. Bilsland, P. D. Dobson, H. J. Moss, P. Pir, D. B. Kell, S. G. Oliver, 2011, “Genome-wide assessment of the carriers involved in the cellular uptake of drugs: a model system in yeast”, *BMC Biology*, 9, 70.
- Bilsland E., P. Pir, A. Gutteridge, A. Johns , R. D. King, S. G. Oliver, 2011, “Functional Expression of Parasite Drug Targets and Their Human Orthologs in Yeast.”, *PLoS Neglected Tropical Diseases*, 5, 10, e1320.
- Dikicioğlu, D., E. Karabekmez, B. Rash, P. Pir, B. Kırdar, S. G. Oliver, 2011, “How yeast re-programmes its transcriptional profile in response to different nutrient impulses”, *BMC Systems Biology*, 5, 148.
- M. de Clare, P. Pir, S. G. Oliver, 2011, “Haploinsufficiency and the sex chromosomes from yeasts to humans”, *BMC Biology*, 9, 15.
- Dobson, P., K. Smallbone, K., D. Jameson, E. Simenodis, K. Lanthaler, P. Pir, C. Lu, N. Swainston, W.B. Dunn, P. Fisher, D. Hull, M. Brown, O. Oshota, N. Stanford, D.B. Kell, R. King, S.G. Oliver, R. Stevens, P. Mendes, 2010, “Further developments towards a genome-scale metabolic model of yeast”, *BMC Systems Biology*, 4, 1, 145-150

Publications - continued

- Gutteridge*, A., P. Pir*, J.I. Castrillo, P.D. Charles, K. Lilley, S.G. Oliver, 2010, "Nutrient control of eukaryote cell growth: A systems biology study in yeast", *BMC Biology*, 8, 68. (* equal contribution authors)
- King R., J. Rowland, W. Aubrey, M. Liakata, M. Markham, L.N. Soldatova, K.E. Whelan, A. Clare, M. Young, A. Sparkes, S.G. Oliver, P. Pir, 2009, "The Robot Scientist Adam," *Computer*, 42, 8, 46-54.
- King, R.D., J. Jowland, S.G. Oliver, M. Young, W. Aubrey, E. Byrne, M. Liakata, M. Markham, P. Pir, L.N. Soldatova, A. Sparkes, K.E. Whelan, A. Clare, 2009, "The Automation of Science", *Science*, 324, 5923, 85-89.
- Dikicioğlu, D., P. Pir, Z. I. Önsan, B. Kırdar, K. Ö. Ülgen, A. Hayes, S. G. Oliver, 2008, "Integration of metabolic modeling and phenotypic data in the evaluation and improvement of ethanol production using respiratory deficient mutants of *Saccharomyces cerevisiae*", *Applied and Environmental Microbiology*, 74, 18, 5809-5816.
- Pir, P., B. Kırdar, A. Hayes, Z. I. Önsan, K. Ö. Ülgen, S. G. Oliver, 2008, "Exometabolic and transcriptional response in relation to phenotype and gene copy number in respiration-related deletion mutants of *S. cerevisiae*", *Yeast*, 25, 9, 661-672.
- Pir, P., B. Kırdar, Z. I. Önsan, K. Ö. Ülgen, A. Hayes, S. G. Oliver, 2006, "Annotation of unknown yeast ORFs by correlation analysis of microarray data and extensive literature searches", *Yeast*, 23, 553-571
- Pir, P., B. Kırdar, Z. I. Önsan, K. Ö. Ülgen, A. Hayes, S. G. Oliver, 2006, "Integrative investigation of metabolic and transcriptomic data", *BMC Bioinformatics*, 7, 203
- Arga, K.Y.,T. Çakır, P. Pir, N. Özer, M. M. Altıntaş and K.Ö. Ülgen, 2004, "Transfer function approach in structured modeling of recombinant yeast utilizing starch", *Process Biochemistry*, 39,10,1237-1248.
- Pir, P., and M. Arıkol, 2002, "Modelling and simulation of a wet scrubber", *Appropriate Environmental and Solid Waste Management and Technologies for Developing Countries, Proceedings of ISWA 2002*, 2521-2528.

Oral and Poster Presentations

- Selçuk, G., P. Pir, 'Kök hücre farklılaşması ve yeniden programlama süreçlerinde sinyal yollarının matematiksel modellerinin oluşturulması', VI. Türk Tıp Dünyası Kurultayı, İstanbul-TÜRKİYE (29-31 Ekim 2019), oral presentation
- Selçuk, G., P. Pir, 'Reconstruction and integration of mathematical models of signalling pathways in stem cell differentiation and reprogramming processes', International Symposium on Health Informatics and Bioinformatics (HIBIT 2019), İzmir-TÜRKİYE (17-18 Ekim, 2019), poster presentation.
- Karakurt, HU., P. Pir, 'Metabolic Effects of Bipolar Disorder on Dorsolateral Prefrontal Cortex: A Genome-Scale Metabolic Model Approach', International Symposium on Health Informatics and Bioinformatics (HIBIT 2019), İzmir-TÜRKİYE (17-18 Ekim, 2019), poster presentation.
- Şengül, S. ET. Duman, P. Pir, 'Reconstruction of a genome-scale model of Eubacterium Limosum (ATCC 8486) by integration of transcriptome data and a KIST612 model', International Symposium on Health Informatics and Bioinformatics (HIBIT 2019), İzmir-TÜRKİYE (17-18 Ekim, 2019), poster presentation.
- Ak, E., B. Çakır, HU., Karakurt, F. Kurtoğlu, Ş. Öztürk, G. Avşar, P. Pir, 'Identification of TF-mediated dynamics of signalling pathways in stem cell reprogramming and differentiation using RNA-seq data', International Symposium on Health Informatics and Bioinformatics (HIBIT 2019), İzmir-TÜRKİYE (17-18 Ekim, 2019), poster presentation.
- Duman, ET., P. Pir, 'Genomic Data Compression by Deep Learning Methods LSTM and CNN', International Symposium on Health Informatics and Bioinformatics (HIBIT 2019), İzmir-TÜRKİYE (17-18 Ekim, 2019), poster presentation.
- Çakır, B. P. Pir, 'Single-cell transcriptome analysis of neuronal cell differentiation processes', International Symposium on Health Informatics and Bioinformatics (HIBIT 2019), İzmir-TÜRKİYE (17-18 Ekim, 2019), poster presentation.
- Avşar, G., P. Pir, 'Prediction of Transcript Profile of Cells via Computational Methods', International Symposium on Health Informatics and Bioinformatics (HIBIT 2019), İzmir-TÜRKİYE (17-18 Ekim, 2019), poster presentation.
- Kökrek, E, P. Pir, 'Bridging Enhancers And Target Genes Through Condition-Specific Regulatory Protein Complexes', International Symposium on Health Informatics and Bioinformatics (HIBIT 2019), İzmir-TÜRKİYE (17-18 Ekim, 2019), poster presentation.
- Yıldız, C., D. Gözüaçık, P. Pir, 'Identification of cell-cell communication by receptor-ligand interactions in cancer', International Symposium on Health Informatics and Bioinformatics (HIBIT 2019), İzmir-TÜRKİYE (17-18 Ekim, 2019), poster presentation.
- Karakurt, HU., P. Pir, 'Genom-Ölçekli Metabolik Model Yaklaşımı Dorsolateral Prefrontal Korteks Üzerinde Bipolar Bozukluğun Metabolik Etkileri' VI. Türk Tıp Dünyası Kurultayı, İstanbul-TÜRKİYE (29-31 Ekim 2019), poster presentation.
- Şengül, S. ET. Duman, P. Pir, 'Eubacterium Limosum (ATCC 8486) Genom Ölçekli Metabolik Modelinin Omik Veri Entegrasyonu ile Oluşturulması', VI. Türk Tıp Dünyası Kurultayı, İstanbul-TÜRKİYE (29-31 Ekim 2019), poster presentation.

Oral and Poster Presentations – continued

- Ak, E., B. Çakır, HU., Karakurt, F. Kurtoğlu, Ş. Öztürk, G. Avşar, P. Pir, ‘Kök hücre yeniden programlanması ve farklılaşmasında rol alan sinyal yolları dinamiğinin RNA-seq verisi kullanılarak TF’lerin aracılığıyla belirlenmesi’, VI. Türk Tıp Dünyası Kurultayı, İstanbul-TÜRKİYE (29-31 Ekim 2019) , poster presentation.
- Duman, ET., YS. Akgül, P. Pir, ‘Derin Öğrenme ile Genom Verisinin Sıkıştırılması’, VI. Türk Tıp Dünyası Kurultayı, İstanbul-TÜRKİYE (29-31 Ekim 2019) , poster presentation.
- Çakır, B. P. Pir, ‘Nöronal hücre farklılaşma süreçlerinin tek hücre transkriptom analizi’, VI. Türk Tıp Dünyası Kurultayı, İstanbul-TÜRKİYE (29-31 Ekim 2019) , poster presentation.
- Avşar, G., P. Pir, ‘Derin Öğrenme Yöntemleriyle Hücre Transkript Profillerinin Tahmini’, VI. Türk Tıp Dünyası Kurultayı, İstanbul-TÜRKİYE (29-31 Ekim 2019) , poster presentation.
- Kökrek, E, P. Pir, ‘Genomdaki Düzenleyici Bölgelerin Doğrudan Etkiledikleri Genlerle İlişkisinin Protein Kompleksleri Aracılığıyla Belirlenmesi’, VI. Türk Tıp Dünyası Kurultayı, İstanbul-TÜRKİYE (29-31 Ekim 2019) , poster presentation.
- Yıldız, C., D. Gözüaçık, P. Pir, ‘Kanserde Reseptör-Ligand Etkileşimleri ile Hücre-Hücre İletişiminin Belirlenmesi’, VI. Türk Tıp Dünyası Kurultayı, İstanbul-TÜRKİYE (29-31 Ekim 2019) , poster presentation.
- Kurtoğlu, F., P. Pir, Spatiotemporal Modelling of Metabolic Networks and Quorum Sensing in Biofilms, International conference on applied mathematics, modeling and Life Sciences, 03 - 05 October 2018 (Invited speaker)
- Pir, P., “A Genome-Scale Metabolic Reconstruction of *Eubacterium limosum KIST612*”, *ISMB/ECCB 2017*, 21-25 July, 2017, Prague, Czech Republic, poster presentation.
- Pir, P., “A Mathematical Model of Cell Fate and Maintenance of Pluripotency”, *Babraham Institute Annual Symposium*, 23-24 April, 2015, Cambridge, UK, oral presentation.
- Pir, P. and N. Le Novère, “A Minimal Model of Early Embryonic Cell Differentiation”, 18-21 June, 2014, *ISSCR Annual Meeting*, Vancouver, Canada, poster presentation.
- Pir, P. and N. Le Novère, “Proceedings of Workshop on Modelling Approaches in Epigenetics”, *EpiGeneSys Workshop on Models, Epigenetics and Evolution*, 22-23 May, 2014, Paris, France, joint oral presentation.
- Pir, P., “Modelling the Epigenetic Status of Promoters”, *Workshop on Modelling Approaches in Epigenetics*, 21-22 March, 2014, Cambridge, UK, oral presentation.
- Pir, P., A.Gutteridge, J. Wu, C. Reeves, B. Rash, A. Hayes, N. Zhang, D.B. Kell, S. G. Oliver, “High-flux control genes in rapidly growing yeast”, *The 11th International Conference on Systems Biology*, 10-15 October, 2010, Edinburgh, UK, oral presentation.
- Pir, P., J. Bason, C. Lu, K. Smallbone, P.D. Dobson, P. Fisher, R.D. King, D.B. Kell, P. Mendes, S. G. Oliver, “In Silico Phenotypic Analysis of Homozygous and Heterozygous Deletion Mutants of High Flux Control Genes”, *The 11th International Conference on Systems Biology*, 10-15 October, 2010, Edinburgh, UK, poster presentation.

Oral and Poster Presentations – continued

- Smallbone, K., P.D. Dobson, D. Jameson, K. Lanthaler, P. Pir, E. Simenodis, N. Swainston, M. Brown, W.B. Dunn, P. Fisher, D. Hull, C. Lu, O. Oshota, “Yeast4.0: A Genome-scale Metabolic Model”, *The 11th International Conference on Systems Biology*, 10-15 October, 2010, Edinburgh, UK, poster presentation.
- Lu, C., P. Pir, K. Smallbone, P. Dobson, A. Clare, P. Mendes, S.G. Oliver, R. King, “Constraint-based optimisation tools for semi-automated refinement of genome-scale yeast metabolic models”, *The 11th International Conference on Systems Biology*, 10-15 October, 2010, Edinburgh, UK, poster presentation.
- Dikicioğlu, D., D. Hasdemir, W. B. Dunn, P.Pir, D. B. Kell, B. Kirdar, S. G. Oliver, “Metabolic pathway analysis of drug resistance mutants with varying respiration capacity in yeast by bridging metabolomics and modeling”, *The 25th International Conference on Yeast Genetics & Molecular Biology*, 19-24 July, 2009, Manchester, UK, poster presentation.
- Pir, P., A.Gutteridge, J. Wu, C. Reeves, B. Rash, M. Freeland, A. Hayes, N. Zhang, D.B. Kell, S. G. Oliver, “High-flux control genes in *S. cerevisiae* are condition specific and may act to reduce growth rate”, *The 25th International Conference on Yeast Genetics & Molecular Biology*, 19-24 July, 2009, Manchester, UK, poster presentation.
- Gutteridge, A., P Pir, J.I. Castrillo, A. Hayes, Leo Zeef, B. Rash, L. Wardleworth, S. G. Oliver, “Analysis of nutrient specific responses to growth rate in budding yeast”, *The 25th International Conference on Yeast Genetics & Molecular Biology*, 19-24 July, 2009, Manchester, UK, poster presentation.
- Pir, P., B. Kırđar, A. Hayes, Z. I. Önsan, K. Ö. Ülgen, S. G. Oliver, “Exometabolic and transcriptional response of respiration-related deletion mutants of *S.cerevisiae* as a function of phenotype and gene copy number”, *The 25th International Conference on Yeast Genetics & Molecular Biology*, 19-24 July, 2009, Manchester, UK, poster presentation.
- Pir, P., A.Gutteridge, J. Wu, C. Reeves, B. Rash, M. Freeland, A. Hayes, N. Zhang, D.B. Kell, S. G. Oliver, “Regulators of maximum growth rate in yeast”, *British Yeast Group Meeting*, 17-19 March, 2009, Cardiff, UK, oral presentation.
- Dikicioğlu, D., B. Rash, P. Pir, A. Hayes, S. G. Oliver, B. Kirdar, “An Integrative and Comparative Study on Regulation of Yeast Metabolism by Two Major Nutrients; Glucose and Ammonium”, *9th International Conference on Systems Biology*, August 2008, Göteborg, Sweden, poster presentation.
- Kuzu, G., D. Dikicioğlu, B. Rash, P. Pir, A. Hayes, S. G. Oliver, B. Kirdar, “Transcriptional Response to the Deletion of Two Multidrug Resistance Genes, Qdr3 and Pdr3 in *Saccharomyces cerevisiae*”, *9th International Conference on Systems Biology*, August 2008, Göteborg, Sweden, poster presentation.
- Dikicioğlu, D., B. Rash, W. B. Dunn, P. Pir, A. Hayes, D. B. Kell, S. G. Oliver, B. Kirdar, “Dynamic Response of *Saccharomyces cerevisiae* to Transient Perturbations in Ammonia Concentration and Integration of Metabolome and Transcriptome Data”, *8th International Conference on Systems Biology*, October 2007, California, USA, poster presentation.

Oral and Poster Presentations – continued

Dikicioğlu, D., B. Rash, W. B. Dunn, P. Pir, A. Hayes, D. B. Kell, B. Kırdar, S. G. Oliver, “Transcriptional and Metabolic Response of *Saccharomyces cerevisiae* to a Nutritional Perturbation when Under Stress”, *13th European Congress on Biotechnology – Symbiosis*, September 2007, Barcelona, Spain, oral presentation.

Pir P., Wu J., Reeves C., Rash B., Hayes A., Oliver S.G., “Identification of high flux-control genes in *S. cerevisiae* growing at maximal rate”, *The XXIIIrd International Conference on Yeast Genetics and Molecular Biology*, 1-6 July, 2007, Melbourne, Australia, poster presentation.

Dikicioğlu D., P. Pir, Z. I. Önsan, K. Ö. Ülgen, B. Kırdar, S. G. Oliver, “Investigation of the Respiratory Pathway in *Saccharomyces cerevisiae* Using Metabolic Data And Flux Balance Analysis”, *The Consortium for Post Genome Science-Genome to Systems*, March 2006, Manchester, UK, poster presentation.

Pir, P., B. Kırdar, Z. I. Önsan, K. Ö. Ülgen, A. Hayes, S. G. Oliver, “Integrated Analysis of Metabolome Profile and Gene Expression in *S. cerevisiae*”, *Gordon Research Conferences – Macromolecular Organisation and Cell Function*, 6-11 August, 2006, Mount Holyoke College, South Hadley, MA, USA, poster presentation.

Pir, P., B. Kırdar, Z. I. Önsan, K. Ö. Ülgen, A. Hayes, S. G. Oliver, “Transcriptional Regulation of Central Carbon Metabolism”, *Genomes to Systems Conference*, 22-24 March, 2006, Manchester, UK, poster presentation.

Pir, P., “Integration of Metabolome and Transcriptome Profiles From Perturbed Chemostats of *S. cerevisiae*”, *12th European Congress on Biotechnology (ECB12)*, 21-25 August, 2005, Copenhagen, Denmark, oral presentation.

Pir, P., B. Kırdar, Z. I. Önsan, K. Ö. Ülgen, A. Hayes, S. G. Oliver, “Analysis of Variance In Transcriptome Data From Perturbation Experiments”, *5th International Conference on Systems Biology (ICSB 2004)*, 9-13 October, 2004, Heidelberg, Germany, poster presentation.

Pir, P., B. Kırdar, Z. I. Önsan, K. Ö. Ülgen, A. Hayes, S. G. Oliver, “Integrated Analysis of Metabolome Profile and Gene Expression in *S. cerevisiae*”, *5th International Conference on Systems Biology (ICSB 2004)*, 9-13 October, 2004, Heidelberg, Germany, poster presentation.

Pir, P., Arikol, M, “Modelling and simulation of a wet scrubber”, *Appropriate Environmental and Solid Waste Management and Technologies for Developing Countries*, ISWA 2002, Istanbul, Turkey, oral presentation.