Macquarie University
School of Chemistry and Biomolecular Sciences
F7B room331
Macquarie University
NSW 2109
Australia
phone: (02) 9850 6258
paul.haynes@mq.edu.au
Current as of: December 2010

PAUL ANDREW HAYNES

EMPLOYMENT HISTORY

MACQUARIE UNIVERSITY – Sydney, Australia, 2006 – present.

Associate Professor in the School of Chemistry and Biomolecular Sciences (CBMS), Director, Masters of Biotechnology Program, and Departmental Director of Higher Degree Research.

- Responsible for running my own research program in proteomics of plant and environmental stress, supervising 6-8 Ph.D. students and a postdoctoral fellow.
- Course convenor and primary lecturer for CBMS833 (Functional Proteomics), a 4 credit point course offered to students in a Masters of Biotechnology Program, and secondary lecturer in CBMS332/832 (Protein Structure and Function), a 3-4 credit point course offered to 3rd year undergraduate and postgraduate students
- Director of Masters of Biotechnology program including student admissions and recruiting, curriculum development and strategic planning.
- Departmental Director of Higher Degree Research, with overall responsibility for approximately 65 Ph.D. and other higher degree research students.

THE UNIVERSITY OF ARIZONA - Tucson, AZ 2003 – 2005
Research Associate Professor in Biochemistry, and Director of Proteomics for the Bio5 Institute: driving my plant biology proteomics research program, teaching undergraduate level courses, supervising research students, and directing a proteomics core facility.
TORREY MESA RESEARCH INSTITUTE (TMRI) - San Diego, CA 2000 – 2003
Principal Scientist: Managed a 2D gel based plant proteomics research team with a staff of six
GENETICS INSTITUTE - Cambridge, MA 1998 - 2000
Staff Scientist: Supervised two staff and performed independent research as part of a product-driven proteomics research team
UNIVERSITY OF WASHINGTON (School of Medicine) - Seattle, WA 1996 - 1998
Senior Fellow: (Department of Molecular Biotechnology)
Performed independent research and participated in several collaborative projects
THE ROCKEFELLER UNIVERSITY – New York, NY 1993 - 1996
Postdoctoral Research Associate: (Laboratory for Molecular Parasitology)
Performed independent research spanning chemistry, biochemistry, molecular biology and cell biology

PROFESSIONAL ACHIEVEMENTS

SUPERVISORY EXPERIENCE

• Supervised two research associate staff while employed at Genetics Institute.
• Supervised a group of three Ph.D. level staff and two research associates at TMRI.
• Supervised one staff scientist, two research associates, three postdoctoral fellows, one Ph.D. student, one M.Sc. student, two senior undergraduate research students and several visiting graduate students at University of Arizona.
•Currently supervising six PhD students at Macquarie University.
•Two students have completed their PhD in 2010.

TEACHING EXPERIENCE

• Lecturer and coordinator for the proteomics course at the HPCE meeting, 2001 and 2003
• Lecturer and joint coordinator of an American society for Mass Spectrometry two day course in "Fundamentals of tandem mass spectrometry", offered at the ASMS meeting, Montreal, June 2003, Nashville, Tennessee, May 2004, and San Antonio, 2005.
• Invited lecturer in numerous undergraduate level biochemistry courses at University of Arizona in 2003-2005 including Biochem 453, Biochem 496, Mol Cell Biol 553, Biochem 462AH Honors Class, and Plant Sciences 560 and 539.
• Course Convenor and primary lecturer for CBMS833-333 (Functional Proteomics), a 4 credit point course offered to students in M.Biotech Program and finaal year undergraduates, 2006 to present.
• Lecturer in CBMS332/832 (Protein Structure and Function), a 3-4 credit point course offered to 3rd year undergraduate and postgraduate students, 2006 to present.
• Lecturer in CBMS336/852 (Molecular Biology and genomics), a 3-4 credit point course offered to 3rd year undergraduate and postgraduate students, 2009 to present. I was the unit convenor in 2009, and I now teach the introductory lectures and help supervise practical session.
• Awarded a Macquarie University Faculty of Science Teaching and Learning Award in 2010.

CONFERENCES AND MEETINGS

I have presented my work at many meetings, including: the Lorne Conference on Protein Structure and Function, 1989-1992; the Woods Hole Molecular Parasitology Meeting, 1993-1995; the Keystone Conference on Complex Carbohydrates in Biology and Medicine, 1994; the 3rd International Glycobiology Symposium, 1995; the Society for Glycobiology Annual Meeting 1996, 1998, 2000 and 2003; the Association of Biomolecular Resource Facilities (ABRF) meeting in 1997, 1998, 2001 and 2005; the American Society for Mass Spectrometry meeting in 1998-2008; the Siena Electrophoresis Meeting 2000 and 2002, the Keystone Plant Biology Meeting 2001, the Keystone Proteomics Meeting, 2003, the American Society for microbiology meeting 2004-2006, ComBio, Brisbane 2006 and Sydney 2007, the Lorne Proteomics Symposium 2007-2008, and Australia-Oceania Human Proteome Meeting (AO-HUPO), Singapore, 2006.

I have also been an invited speaker at: the HPCE Annual Meeting in Boston (2001) and San Diego (2003); the Micromass Users Meeting at ASMS in Chicago (2001); a Biorad/Micromass sponsored proteomics lecture series in Hong Kong, Shanghai, China, and Seoul, South Korea (2000); the International Proteomics Conference in Canberra, Australia (2001); the Keystone Meeting on Plant Signal Transduction, Granlibakken, California (2002); the Agrogene Conference in Paris, France (2002); the Lorne Protein Meeting, Lorne, Australia, (2003); the Lorne Proteomics

Symposium (2003, 2006); the Genetics Congress, Melbourne, Australia, (2003); the Lab Automation Meeting, San Jose, California (2004); the American Society for Mass Spectrometry Meeting, Nashville, Tennessee (2004); the international Fungal Proteomics Conference in Portland, Oregon (2004); and the Rice Functional Genomics Symposium in Tucson (2004); the Plant and Animal Genome Meeting in San Diego (2004 and 2005); and the ABRF meeting in Savannah, Georgia, (2005).

FELLOWSHIPS, MEMBERSHIPS, TRAINING AND SYNERGISTIC ACTIVITIES

• Member of the Society for Glycobiology since 1994, the American Society for Mass Spectrometry (ASMS) since 1996, and the American Association for the Advancement of Science (AAAS) since 2000.

• Invited to act as a referee for: manuscripts to be published in various journals, including Proteomics, Journal of Proteome Research, Nature Medicine, Molecular and Cellular Proteomics, Analytical Chemistry, Plant physiology, Journal of Agricultural and Food Chemistry and Glycobiology; grant applications from funding bodies including the National Institutes of Health (NIH), the National Science Foundation (NSF), Genome Canada, the US-Israel Binational Science Foundation (BARD), and the Australian Research Council (ARC); and the Ph.D. Theses of two students at Australian National University, one at University of Melbourne and one from the University of Technology, Sydney.

RESEARCH GRANT SUPPORT

Current Research Support:

• Australian Research Council (ARC) Linkage-Project LP0991037 2010-2012, $150,000, Environmental proteomics: A new, more reliable method of measuring the effects of chemical pollution on Australia's coastal ecosystems. G. Birch, D. Raftos, R. Coleman, P.A. Haynes, R. Hyne, S.E. Taylor

• Australian Research Council (ARC) Linkage Infrastructure Equipment Facilities (LIEF) Grant LE110100101 Better faster cheaper: improving shotgun proteomics by using high speed ion trap mass spectrometry. P.A. Haynes, N.H. Packer, M.P. Molloy, H.K. Nevalainen and R.D. Willows.

• Macquarie University Research Development Grant, 01/07/10 – 30/06/12, $49,900, Cortical link between cardiovascular health and mental illness. J. Cornish, P.A. Haynes and A. Goodchild.

• Australian Research Council (ARC) Super Science program FS110200026 2011-2013, $468,00, Small talk: communication networks between microbes. N. Packer, M. Molloy, I. Paulsen, H. Nevalainen, P.A. Haynes

• Australian Research Council (ARC) Linkage Infrastructure Equipment Facilities (LIEF) Grant LE100100150, 2010, $500,000, Beyond Proteomics: structure and function of protein modifications. N. Packer, P. Robinson, M. von Itzstein, R. Baxter, P. Tam, K. North, A. McCluskey, M. Molloy, J. Götz, M. Graham, S. Firth, M.A. Baker, G. O'Neill, R. Diefenbach, T. Bryan, R. Murray, B. Henderson, J. Byrne, A. Goodchild, P.A. Haynes, M. Chircop, M.S. Baker, R. Reddel, J. Coorssen, A. Braithwaite.

• NSW Government Biofirst Fellowship, 02/01/2006 – 01/31/2011, $400,000, “Identification and characterisation of novel proteins in rice”. P.A. Haynes.

Past Research Grants Awarded:

• New South Wales Government Teaching and Industry Scheme Scholarship (1988).

• British Council Postgraduate Bursary (1992).

• British Biotechnology and Scientific Research Council (BBSRC) Technology Foresight Three Year Research Fellowship (1996). Declined.

• Australian Research Council (ARC) three year Linkage-Project Grant in proteomics of rice root morphology, as a Co-Principal Investigator with Professor Barry Rolfe (2002). Returned due to closure of TMRI.

• NSF 0427107 Small Grant for Exploratory Research entitled "Global Analysis of the Nuclear proteome". Co-Principal Investigator with Professor David Galbraith. Total $100, 000 for 6/15/04-6/14/06.

• Named Investigator on NIH/NIAID R01 AI061811-01 (Marilyn Halonen Principal Investigator), Microbial Innate Immunization Asthma Pathogenesis, Total Amount $3,071,117, for 07/01/04 - 06/30/09.

• NSF Plant Genome, Self-assembling protein microarrays: development of a resource for the plant research community, amount requested, $1,674,110 for 7/1/05-6/30/07, David Galbraith, David Gang, Serrine Lau and Paul Haynes Co-PIs.

• Australian Research Council Linkage Infrastructure Equipment Facilities (LIEF) Grant, awarded 2007, for acquisition of a linear ion trap – electron transfer dissociation mass spectrometer, $350,000. Principal Investigator and co-ordinator of a consortium including 12 investigators from four universities -P.A.Haynes, S. Cordwell (Sydney), B. Herbert (UTS), M. Djordjevic (ANU), R.D. Willows, T.H. Roberts, M.S. Baker, M.P. Molloy, P. Karuso, J. Jamie, H. Nevalainen, F. Liu.

• Macquarie University Research Development grant, 01/07/06 – 30/06/07, "Characterisation of novel stress response proteins in rice" $23,875

• Macquarie University research Infrastructure block grant, 01/06/06, $56,000 for refurbishments and improvements to greenhouse facilities

• Macquarie University research Infrastructure block grant, 01/06/06, $30,000 for Instron materials testing system, Mark Westoby lead PI, M.Herberstein, M.Leishman, I.Wright, B.Atwell, C.Lusk. L.Hughes, P.A. Haynes

• Macquarie University Safety Net grant, 01/01/07 – 30/9/08, "Functional proteomic analysis of expressed orphan proteins in rice" $19,675

• Macquarie University Safety Net grant, 01/01/08 – 31/12/08, "Functional proteomic analysis of stress-response proteins in rice" $15,800

PUBLICATIONS

I have published more than **60** peer-reviewed papers, 6 invited publications, 4 issued patents, 3 patent applications, and more than 65 published conference papers. According to the ISI Web of Science (December 2010), in my 15+ years of research my publications have been cited more than **2000** times in total, at an average of 33 citations each, and an average of more than 130 citations each for the top 10 papers, and I have a Hirsch research output (H-index) of **25**.

PEER-REVIEWED PUBLICATIONS

1. P.A. Haynes, D. Sheumack, J. Kibby and J.W. Redmond: Amino acid analysis using 9-fluorenylmethyl chloroformate and reversed-phase high performance liquid chromatography - Journal of Chromatography, (1991), 540, 177-185.

2. **P.A. Haynes**, D. Sheumack, L.G. Greig, J. Kibby and J.W. Redmond: Applications of automated amino acid analysis using 9-fluorenylmethyl chloroformate - Journal of Chromatography, (1991), 588, 107-114.

3. K.L. Williams, A.A. Gooley, **P.A. Haynes**, M. Batley, J.H. Curtin, M.C. Stuart, A.C. Champion, D.D. Sheumack, and J.W. Redmond: Analytical biotechnology: applications for downstream processing - Australian Journal of Biotechnology, (1991), 5, 96-100.

4. **P.A. Haynes**, M. Batley, R.J. Peach, S.O. Brennan and J.W. Redmond: Characterization of oligosaccharides from a glycoprotein variant of human serum albumin (albumin Casebrook) using high performance anion exchange chromatography and nuclear magnetic resonance spectroscopy - Journal of Chromatography, Biomedical Applications, (1992), 581, 187-193.

5. **P.A. Haynes**: Analysis of proteins, carbohydrates and glycoproteins, (1992), Ph.D. Thesis, Macquarie University, Sydney, Australia.

6. P.A. Haynes, A.A. Gooley, M.A.J. Ferguson, J.W. Redmond, and K.L. Williams: Post-translational modifications of the *Dictyostelium discoideum* glycoprotein PsA: Glycosylphosphatidylinositol membrane anchor and composition of O-linked oligosaccharides - European Journal of Biochemistry, (1993), 216, 729-737.

7. A. Erwin, **P.A. Haynes**, P.A. Rice and E.C. Gottschlich: Analysis of *Neisseria gonorrhoea* lipooligosaccharide mutants - Journal of Experimental Medicine (1996) 184, 1233-1241.

8. **P.A. Haynes**, M.A.J. Ferguson and G.A.M. Cross: Structural Characterization of novel cell-surface glycoconjugates of *Trypanosoma cruzi* - Glycobiology (1996) 6, 869-878.

9. T. Nozaki, **P.A. Haynes** and G.A.M. Cross: Characterization of the *Trypanosoma brucei* homologue of a *Trypanosoma cruzi* flagellum-adhesion glycoprotein - Molecular and Biochemical Parasitology (1996) 82, 245-255.

10. **P.A. Haynes**, D.G. Russell, and G.A.M. Cross: Subcellular localization of *Trypanosoma cruzi* glycoprotein GP72 - (1996) Journal of Cell Science, 109, 2979-2988.

11. **P.A. Haynes** and G.A.M. Cross: Expression of epitope-tagged glycoprotein GP72 throughout the *Trypanosoma cruzi* life-cycle - (1996) Molecular and Biochemical Parasitology (1996) 83, 253-256.

12. P.A. Haynes: Phosphoglycosylation: a new structural class of glycosylation ? - (1998) Glycobiology, 8, 1-5.

13. P.A. Haynes, N. Fripp and R. Aebersold: Identification of gel separated proteins by liquid chromatography - electrospray mass spectrometry: Comparison of methods and their limitations - (1998) Electrophoresis, 19, 6, 939-945.

14. P.A. Haynes, I. Miller, R. Aebersold, M. Gemeiner, I. Eberini, M. R. Lovati, C. Manzoni, M. Vignati and E. Gianazza: Proteins of rat serum I: Establishing a reference 2-DE map by immunodetection and microbore high performance liquid chromatography - electrospray mass spectrometry - (1998) Electrophoresis, 19, 7, 1484-1492.

15 I. Miller, **P.A.Haynes**, M. Gemeiner, R. Aebersold, C. Manzoni, M. R. Lovati, M. Vignati, I. Eberini, and E. Gianazza: Proteins of rat serum II: Influence of biological parameters on the 2-DE pattern - (1998) Electrophoresis, 19, 7, 1493-1500.

16. R. Aebersold, D. Figeys, S.P. Gygi, G. Corthals, **P.A. Haynes**, B. Rist, J. Sherman, Y. Zhang and D.R. Goodlett: Towards an integrated analytical technology for the generation of multidimensional protein expression maps – (1998) Journal of Protein Chemistry, 17, 6, 533-535.

17. **P.A. Haynes**, S.P. Gygi, D. Figeys, and R. Aebersold: Proteome analysis: biological assay or data archive ? - (1998) Electrophoresis, 19, 11, 1862-1871.
18. E.V. Caler, S. Vaena de Avalos, **P.A. Haynes**, N. Andrews and B. Burleigh: Oligopeptidase B dependent host cell signaling is required for *Trypanosoma cruzi* invasion - (1998) EMBO Journal, 17, 17, 4975-4986.
19. A. Ducret, N. Bartone, **P.A. Haynes**, A. Blanchard and R. Aebersold: A simplified gradient solvent delivery system for capillary liquid chromatography - electrospray ionization mass spectrometry - (1998) Analytical Biochemistry, 265, 1, 129-138.
20. I. Miller, **P.A. Haynes**, I. Eberini, M. Gemeiner, R. Aebersold and E. Gianazza: Proteins of Rat serum III. Gender-related differences in protein concentration under baseline conditions and upon experimental inflammation as evaluated by two-dimensional electrophoresis – (1999) Electrophoresis, 20, 5, 836-845.
21. I. Eberini, I. Miller, M. Gemeiner, **P.A. Haynes**, R. Aebersold, L. Puglisi, C.R. Sirtori, and E. Gianazza: A web site for the rat serum protein study group – (1999) Electrophoresis. 20, 18, 3599-3602.
22. **P.A. Haynes** and R. Aebersold: Simultaneous detection and identification of O-GlcNAc modified proteins using liquid chromatography – tandem mass spectrometry – (2000) Analytical Chemistry 72, 21, 5402-5410.
23. **P.A. Haynes** and J.R. Yates III: Proteome profiling: pitfalls and progress (2000) Yeast, 17, 2, 81-87.
24. S.A. Steitz, M.Y. Speer, G. Curinga, H.Y.Yang**, P.A. Haynes**, R. Aebersold, T. Schinke, G. Karsenty and C.M. Giachelli: Smooth muscle cell phenotypic transition associated with calcification: upregulation of Cbfa1 and downregulation of smooth muscle lineage markers – (2000) Circulation Research, 89, 12, 1147-1154.
25. T.A. Zimmers, M.V. Davies, L.G. Koniaris, **P.A. Haynes**, A.F. Esquela, K.N. Tomkinson, A.C. McPherron, N.M. Wolfman, and S.J. Lee: Induction of cachexia in mice by systemically administered myostatin (2002) Science, 296, 5572, 1486-1488.
26. N.L. Andon, S. Hollingworth, A. Koller, A. J. Greenland, J. R. Yates III and **P. A. Haynes**: Proteomic characterization of wheat amyloplasts using identification of proteins by tandem mass spectrometry – (2002) Proteomics, 2, 1156-1168.
27. A. Koller, M. P. Washburn, B. M. Lange, N. L. Andon, C. Deciu, **P. A. Haynes**, L. Hays, D. Schieltz, R. Ulaszek, J. Wei, D. Wolters and J. R. Yates III: Proteomic Survey of Metabolic Pathways in Rice – (2002) Proceedings of the National Academy of Sciences, USA, 9, 18, 11969-11974.
28. T. C. Hunter, N. L. Andon, A. Koller, J. R. Yates III and **P.A. Haynes**: The functional proteomics toolbox: methods and applications – (2002) Journal of Chromatography B, 782, 165-181.
29. K. Yamaguchi, S. Prieto, M.V. Beligni, **P. A. Haynes**, W.H. McDonald, J. R. Yates III and S.P. Mayfield : Proteomic characterization of the small subunit of *Chlamydomonas reinhardtii* chloroplast ribosome: Identification of a novel S1 domain-containing protein and unusually large orthologues of bacterial S2, S3 and S5 – (2002) The Plant Cell, 14, 11, 2957-2974
30. K. Yamaguchi, M.V. Beligni, S. Prieto, **P. A. Haynes**, W.H. McDonald, J. R. Yates III and S.P. Mayfield : Proteomic characterization of the *Chlamydomonas reinhardtii* chloroplast ribosome identifying proteins unique to the 70s ribosome – (2003) J. Biol. Chem. 278, 36, 33774-33785.
31. N.L. Andon, D. Eckert, A. Koller, J. R. Yates III and **P. A. Haynes**: High-throughput functional affinity purification of mannose-binding proteins from Rice – (2003) Proteomics, 7, 1270-1278.
32. B. Cooper, D. Eckert, N.L. Andon, J. R. Yates III and **P. A. Haynes**: Investigative Proteomics: identification of an unknown plant virus from infected plants using mass spectrometry – (2003), J Am. Soc. Mass Spectrom., 14, 7, 736-741.

33. A.K. Panigrahi, T. Allen, **P. A. Haynes**, R. Aebersold and K. Stuart : Mass Spectrometric Analysis of *Trypanosoma brucei* Editosome, a Multiprotein Complex that Catalyzes RNA Editing – (2003) J Am. Soc. Mass Spectrom., 14, 7, 728-735.
34. J. Zhong, **P. A. Haynes**, S. Zhang, X. Yang, N.L. Andon, D. Eckert, J. R. Yates III, X. Wang and P. Budworth: Development of a system for the study of protein-protein interactions *in planta*: characterization of a TATA-box binding protein complex in *Oryza sativa* – (2003) J. Proteome Res., 2, 5, 514-522.
35. R. Cumming, N.L. Andon, **P.A. Haynes**, M. Park, W.H. Fisher and D. Schubert: Profiling the redox proteome by sequential nonreducing/reducing two-dimensional SDS-PAGE and mass spectrometry – (2004) J. Biol. Chem., 279, 21, 21749-21758.
36. L. Breci, E. Hattrup, M. Keeler, R. Johnson, J. Letarte, and **P.A. Haynes**: Comprehensive proteomics in yeast using chromatographic fractionation, gas phase fractionation, protein gel electrophoresis, and isoelectric focusing – (2005) Proteomics, 8, 2018-2028.
37. A. Manuell, K. Yamaguchi, **P.A. Haynes**, R. Milligan and S.P Mayfield**:** Composition and Structure of the 80S Ribosome from the Green Alga Chlamydomonas reinhardtii: 80S Ribosomes are Conserved in Plants and Animals. **–** (2005) J. Mol. Biol, 351, 2, 266-279.
38. M.L. Medina, **P.A. Haynes**, L. Breci and W.A. Francisco: Analysis of differentially expressed secreted proteins from *Aspergillus flavus* – (2005) Proteomics, 5, 12, 3153-3161.
39. **P.A. Haynes**, S.J. Miller, T. Radabaugh, M. Galligan, L. Breci, J. Rohrbough, F. Hickman and N. Merchant: The Wildcat Toolbox: A set of perl script utilities for use in peptide mass spectral database searching and proteomics experiments – (2006) J Biomol. Tech. 17, 2, 97-102.
40. K. Orsborn, L. Shubitz, T. Peng, E. Kellner, M.J. Orbach, **P.A. Haynes** and J.N. Galgiani: Protein expression profiling of *Coccidioides posadasii* by two dimensional in gel electrophoresis (2D-DIGE) and evaluation of a newly recognized peroxisomal matrix protein (Pmp1) as a potential vaccine candidate – (2006), Infection and Immunity, 74, 3, 1865-1872.
41. L.G. Frigeri, T.R. Radabaugh, **P.A. Haynes**, and M. Hildebrand: Identification of Proteins from a Cell Wall Fraction of the Diatom *Thalassiosira pseudonana* via Proteomics: Insights into Silica Structure Formation – (2006) Mol. Cell Proteomics, 5, 1, 182-193.
42. J. Rohrbough, L. Breci, N. Merchant, S.J. Miller and **P.A. Haynes**: Verification of single peptide protein identifications by the application of complementary database search algorithms – (2006) J Biomol. Tech. 17, 5, 327-332.
43. L. Breci and **P.A. Haynes**: Two-dimensional liquid chromatography – tandem mass spectrometry of proteins extracted from rice leaves and roots – (2007) Methods Mol. Biol., 355, 249-266.
44. M. Keeler, J. Letarte, E. Hattrup, F. Hickman and **P.A. Haynes**: Two-dimensional differential in-gel electrophoresis (DIGE) of Tomato leaves and roots – (2007) Methods Mol. Biol., 355, 157-174.
45. **P.A. Haynes** and T.H. Roberts: Plant Proteomics – looking beyond the usual suspects – (2007) Proteomics, 7, 16, 2963-2975.
46. E. Hattrup, K.A. Neilson, L. Breci and **P.A. Haynes**: Proteomic analysis of shade-avoidance response in tomato leaves – (2007) J Agric. Food Chem. 55, 21, 8310-8318.
47. J.M. Chick, **P.A. Haynes**, M.P. Molloy, B. Bjellqvist, M.S. Baker and A.C. Len: Characterization of the Rat Liver Membrane Proteome Using Peptide Immobilized pH Gradient Isoelectric Focusing – (2008) J Proteome Res. 7, 3, 1036-1045.

48. N. Naidoo, S.J. Harrop, M. Sobti, **P.A. Haynes**, B.R. Szymczyna, J.R. Williamson, P.M. Curmi and B.C. Mabbutt: Crystal structure of Lsm3 octamer from Saccharomyces cerevisiae: implications for Lsm ring organisation and recruitment – (2008) J Mol Biol. 377, 5, 1357-1371.

49. J.M. Chick, **P.A. Haynes**, B. Bjellqvist and M.S. Baker (2008). A combination of immobilized pH gradients improves membrane proteomics. J. Proteome Res. 7(11): 4974-4981.

50. S.A. Bassett, J.J. Bond, F.Y.S. Kwan, A.F. McCulloch, **P.A. Haynes**, R.D. Johnson, G.T. Bryan and T.W. Jordan: Proteomic analysis of a filamentous fungal endophyte using EST datasets **–** (2009) Proteomics, 9, 8, 2295-300.

51. A. Lee, D. Kolarich, **P.A. Haynes**, P.H. Jensen, M.S. Baker and N.H. Packer: Rat liver membrane glycoproteome: enrichment by phase partitioning and glycoprotein capture - (2009) J. Proteome Res. 8, 2, 770-81.

52. E.S. Kelleher, T.D. Watts, B.A. Laflamme, **P.A. Haynes** and T.A. Markow: Proteomic analysis of Drosophila mojavensis male accessory glands suggests novel classes of seminal fluid proteins – (2009) Insect Biochem Mol Biol. 5,366-71.

53. M. Marangon, S.C. Van Sluyter, **P.A. Haynes**, E.J. Waters: Grape and wine proteins: their fractionation by hydrophobic interaction chromatography and identification by chromatographic and proteomic analysis – (2009) J. Agric Food Chem. 57(10), 4415-4425.

54. J.Q. Gerlach, V.P. Bhavanandan, **P.A. Haynes** and L. Joshi: Vicilin family glycoprotein from *Nicotiana sylvestris* - (2009) J. Botany, J Botany, Oct 16, Article ID 560394.

55. S.C. Van Sluyter, M. Marangon, S.D. Stranks, K.A. Neilson, Y. Hayasaka, **P.A. Haynes**, R.I. Menz, E.J. Waters: Two-Step Purification of Pathogenesis-Related Proteins from Grape Juice and Crystallization of Thaumatin-like Proteins – (2009) J Agric Food Chem. 57(23):11376-82.

56. K.A. Neilson, C.G. Gammulla, M. Mirzaei, N. Imin, **P.A. Haynes**: Proteomic analysis of temperature stress in plants – (2010) Proteomics, 10, 1-18.

57. A.P. Scafaro, **P.A. Haynes**, B.J. Atwell: Physiological and molecular changes in Oryza meridionalis Ng., a heat-tolerant species of wild rice – (2010) J Exp Botany, 61(1), 191-202.

58. C. G. Gammulla, D. Pascovici, B.J. Atwell and **P.A. Haynes**: Differential metabolic response of cultured rice (*Oryza sativa)* cells exposed to high- and low- temperature stress. – (2010) Proteomics, 10(16):3001-19.

59. C. Voelckel, M. Mirzaei, M. Reichelt, Z. Luo, D. Pascovici, P.B. Heenan, S. Schmidt, B. Janssen, **P.A. Haynes**, P.J. Lockhart: Transcript and protein profiling identify candidate gene sets of potential adaptive significance in New Zealand Pachycladon. – (2010) BMC Evol Biol. 20 (10), 151-159.

60. P. Kiesler, **P.A. Haynes**, L. Shi, P.N. Kao, V.H. Wysocki and D. Vercelli: NF45 and NF90 regulate HS4-dependent interleukin-13 transcription in T cells – (2010) J Biol Chem. Jan 5. [epub ahead of print].

61. M. Sobti, L. Cubeddu, **P.A. Haynes** and B.C. Mabbutt: Engineered rings of mixed yeast Lsm proteins show differential interactions with translation factors and U-rich RNA – (2010) Biochemistry, Mar 12;285(11):8256-67.

62. A. Lee, J.M. Chick, D. Kolarich, P.A. **Haynes,** G.R. Robertson, M. Tsoli, L. Jankova, S.J. Clarke, N.H. Packer, M.S. Baker: Liver membrane proteome glycosylation changes in mice bearing an extra-hepatic tumour – (2010) Mol Cell Proteomics. 2010 Feb 18 [Epub ahead of print].

63. M. Mirzaei, D. Pascovici, T. Keighley, I. George, C. Voelckel, P.B. Heenan and **P.A. Haynes**: Shotgun proteomic profiling of five species of New Zealand Pachycladon – (2011) Proteomics, Jan;11(1):166-71

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EDUCATION

- Doctor of Philosophy (Chemistry), Macquarie University, Sydney, Australia, 1994
- Bachelor of Applied Science (Chemistry), University of Technology, Sydney, Australia, 1985

PERSONAL

Citizenship: Australian, American, and European

SUMMARY STATEMENT

The research program in my group is aimed at applying an analytical chemistry approach (proteomics) to understanding stress responses in plants and other organisms at the molecular level. We group this under the banner of environmental proteomics. Examples of current projects include proteomic analysis of: temperature stress and water deficit stress in rice; ecological adaptation in Pachycladon, heavy metal stress in Oysters, and environmental adaptation in grapevines.

I lecture in protein chemistry and plant biology in postgraduate and undergraduate level courses, supervise numerous undergraduate and postgraduate research students and staff, and I have a proven track record of successfully attracting grant funding. I have more than 15 years research experience, mainly in academia but also in private industry. I have a strong background in both chemistry and biology, and I am a firm believer in collaborating with other scientists of complementary skills as a means of leveraging available resources to their fullest extent.

My principal strengths are my ability to build something from nothing, my enthusiasm for science, and my desire to communicate that enthusiasm to others. My objective is to further my career in Australian science, both as a productive researcher and as an enthusiastic teacher.