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CURRICULUM VITAE

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EDUCATION:

2000: Ph.D. (Tropical Medicine - Medical Microbiology), Liverpool School of Tropical Medicine, University of Liverpool, Liverpool, United Kingdom.
Supervisors: Professor C. A. Hart and Dr. Paul Shears.
Thesis: A study of the molecular epidemiology and genetic basis of virulence mechanisms in *Shigella* spp.

1992: B.Sc. in Biology (Second Class Honors), Prince of Songkla University, Songkhla, Thailand

PROFESSIONAL EXPERIENCE:

- April 2006-Present: Research Associate, Microbial Genetics and Genomics Center, Northern Arizona University, Flagstaff, Arizona, USA.
- July 2002-March 2006: Postdoctoral Fellow, Department of Microbiology and Infectious Diseases, University of Calgary, Calgary, Alberta, Canada.
- October 2001-June 2002: Postdoctoral Fellow in Biophysics, Physics Department, Dalhousie University, Halifax, Nova Scotia, Canada.
- July 2000-September 2001: Lecturer and Head of the Molecular Epidemiology Unit, Department of Tropical Hygiene, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand.
- 1993 - 1996: Electron Microscopist, Suranaree University of Technology, Nakhon Ratchasima, Thailand.
- 1992: Research Assistant, Bangkok Herbarium, Royal Forest Department, Ministry of Agriculture, Bangkok, Thailand.

AWARDS AND SCHOLARSHIPS:

- 1) Young Investigator Award, the 5th Conference of the Federation of Infection Society, 1998, Manchester, England.
- 2) Royal Thai Government Student Scholarship, 1996-2000.
- 3) SUT-CUTC Scholarship, Suranaree University of Technology-Canadian Universities of Technology Consortium, 1994.

PUBLICATIONS:

- 1) **Tuanyok, A.**, R.K. Auerbach, T.S. Brettin, D.C. Bruce, A.C. Munk, J.C. Detter, T. Pearson, H. Hornstra, R.W. Sermswan, V. Wuthiekanun, S.J. Peacock, B.J. Currie, P. Keim, and D.M. Wagner. A horizontal gene transfer event defines two distinct groups within *Burkholderia pseudomallei* that have dissimilar geographic distributions. *Journal of Bacteriology* in press.
- 2) Auerbach R.K, **A. Tuanyok**, W.S. Probert, L. Kenefic, A.J. Vogler, D.C. Bruce, A.C. Munk, T.S. Bretin, M. Eppinger, J. Ravel, D.M. Wagner, and P. Keim. 2007. *Yersinia pestis* evolution on a small timescale: comparison of whole genome sequences from North America. *PLoS One* 2(8):e770.
- 3) **Tuanyok, A.**, M. Tom, J. Dunbar, and D.E. Woods. 2006. Genome-wide expression analysis of *Burkholderia pseudomallei* infection in hamster model of acute melioidosis. *Infection and Immunity* 74(10):5465-5476.
- 4). **Tuanyok, A.**, H.S. Kim, W.C. Nierman, Y. Yu, J. Dunbar, R. A. Moore, P. Baker, J.M. Tom, L. Ling, and D.E. Woods. 2005. Genome-wide expression analysis of iron regulation in *Burkholderia pseudomallei* and *Burkholderia mallei* using DNA microarrays. *FEMS Microbiology Letters* 252(2):327-335.
- 5) Moore, R.A., S. Reckseidler-Zenteno, H. Kim, W.C. Nierman, Y. Yu, **A. Tuanyok**, J. Warawa, D. DeShazer, and D.E. Woods. 2004. The contribution of gene loss to the pathogenic evolution of *Burkholderia pseudomallei* and *Burkholderia mallei*. *Infection and Immunity* 72(7):4172-4187.
- 6) Stoica, O., **A. Tuanyok**, X. Yao, M.H. Jericho, D. Pink, and T.J. Beveridge. 2003. Elasticity of membrane vesicles isolated from *Pseudomonas aeruginosa*. *Langmuir* 19(26):10916-10924.

GENBANK SUBMISSION:

NZ_AAYX00000000. *Burkholderia pseudomallei* 305, unfinished sequence, whole genome shotgun sequence. Nelson, W.C., Wagner, D., Currie, B., **Tuanyok, A.**, Mayo, M., Schupp, J., Lum, G., Keim, P. and Bretin, T. 29-MAR-2007.

EF377328. *Burkholderia pseudomallei* strain 305 flagella and chemotaxis gene cluster, complete sequence. **Tuanyok, A.**, Auerbach, R.K., Brettin, T.S., Bruce, D.C., Munk, A.C., Detter, C., Wuthiekanun, V., Peacock, S.J., Currie, B.J., Keim, P. and Wagner, D.M. 20-FEB-2007.

PATENT APPLICATIONS:

U.S. Provisional Patent Application No. 60/948,324, “*Burkholderia pseudomallei* Diagnostic Elements that Predict Mortality in Melioidosis”; A. Tuanyok, R.K. Auerbach, P.S. Keim, D.M. Wagner, and B.J. Currie; filed 06-JUL-2007.

RESEARCH SUPPORT:

Research Grant (Keim), Subaward from TGen North (Wagner) 09/01/07-08/31/12
National Institutes of Health-NIAID

Burkholderia: international collaborative development of novel diagnostics.

This project will develop real-time PCR assays to identify and characterize *Burkholderia pseudomallei* from clinical specimens. The assays will be validated using clinical specimens from a highly endemic region in Australia.

Role: Co-Investigator on Subaward (20% effort) \$1,215,633

Research Grant (Barbour), Subaward from PSWRCE (Tuanyok) 05/01/07-04/30/08
National Institutes of Health-NIAID: Regional Center of Excellence

Integrative genomic and proteomic analyses of *Burkholderia pseudomallei*.

This study is analyzing genomic diversity and proteomes of genetically diverse *B. pseudomallei*.

Role: Principal Investigator on Subaward (20% effort) \$72,825

Research Grant (Barbour), Subaward from PSWRCE (Wagner) 05/01/06-04/30/08
National Institutes of Health-NIAID: Regional Center of Excellence

Occurrence and ecologic associations of virulence genes in *Burkholderia pseudomallei*.

This study is genetically characterizing diverse *Burkholderia pseudomallei* subcultures obtained from a highly endemic setting in northern Thailand.

Role: Co-Investigator on Subaward (20% effort) \$296,000

PRESENTATIONS (TALKS & POSTERS):

1) Reckseidler-Zenteno, S.L., **A. Tuanyok**, R. Moore, E. Wong, and D.E. Woods. 2006. Genetic and functional characterization of the capsules of *Burkholderia pseudomallei*. Oral presentation at the Conference on Infectious Diseases, Banff, Alberta, Canada, May 2006.

2) **Tuanyok, A.**, M. Tom, J. Dunbar, S. Kim, W. Nierman, and D.E. Woods. Microarray analysis of gene expression in *Burkholderia pseudomallei* in response to various growth conditions. Oral presentation at the 4th World Melioidosis Congress, Singapore, September 2004.

3) Reckseidler-Zenteno, S. L., **A. Tuanyok**, and D.E. Woods. Genetic and functional characterization of the capsular polysaccharides of *Burkholderia pseudomallei*. Oral presentation at 4th World Melioidosis Congress, Singapore, September 2004.

4) Moore, R.A., S. Reckseidler-Zenteno, W. Nierman, H. Kim, **A. Tuanyok**, J. Warawa, D. DeShazer, and D.E. Woods. The contribution of gene loss to the pathogenic evolution of *Burkholderia pseudomallei* and *Burkholderia mallei*. Poster presentation at the 104th General Meeting of the American Society for Microbiology, New Orleans, USA, May 2004.

5) **Tuanyok, A.**, R.A. Moore, and D.E. Woods. Microarray analysis of gene expression in *Burkholderia pseudomallei*. Poster presentations at the *Burkholderia* Genomes Workshop, Sanger Institute, Cambridge, England, March 2003.

6) **Tuanyok, A.**, R.A. Moore, and D.E. Woods. Microarray analysis of gene expression in *Burkholderia pseudomallei*. Poster presentations at the Annual Meeting of the Canadian Bacterial Disease Network (CBDN), Calgary, Canada, July 2003.

7) Stoica, O., **A. Tuanyok**, X. Yao, M.H. Jericho, D. Pink, and T.J. Beveridge. Elasticity of membrane vesicles isolated from *Pseudomonas aeruginosa*. Poster presentation at Physics in Canada Conference, University of Prince Edward Island, PEI, Canada, May 2003.

8) **Tuanyok, A.** and P. Shears. A study of the molecular epidemiology of *Shigella sonnei* infections in the northwest of England. Oral presentation at the Joint International Tropical Medicine Meeting (JITMM), Bangkok, Thailand, December 2000.

9) **Tuanyok, A.** and P. Shears. Molecular pathogenesis of *Shigella sonnei*. Young Investigator Award poster presentation at the 5th Conference of the Federation of Infection Society (FIS), Manchester, England, December 1998. Abstract in *Journal of Infection* 39(1):A11.

TEACHING EXPERIENCE:

1) Lecturer in Tropical Hygiene Class (International), Subject: Molecular Epidemiology. Course: 2001 Diploma in Tropical Medicine and Hygiene (DTM&H), Bangkok School of Tropical Medicine, Bangkok, Thailand.

2) Lecturer in Basic Computer Programs for Epidemiologists (International). Subject: EpiInfo Course: 2001 Diploma in Tropical Medicine and Hygiene (DTM&H), Bangkok School of Tropical Medicine, Bangkok, Thailand

SCIENTIFIC MEMBERSHIPS AND SERVICE:

- 1) Reviewer, American Society of Tropical Medicine and Hygiene.
- 2) 2004-present: Member, American Society for Microbiology.
- 3) 2002-present: Member, Canadian Society of Microbiologists.
- 4) 2001-present, Member, Nuclear Society of Thailand.
- 5) 1994-present, Member, Electron Microscopy Society of Thailand.