

Abbreviated Curriculum Vitae
Promotion and Tenure File
7/1/2006 – 9/1/08

John G. Thomas, M.S., Ph.D. (HCLD, ABB)

High Complexity Clinical Laboratory Director
American Board of Bioanalysis

Professor, Departments of Pathology
Adjunct Professor, Dept. of Microbiology, Cell Biology, and Immunology
West Virginia University School of Medicine
Adjunct Professor, West Virginia University School of Pharmacy
Clinical Professor, Department of Periodontology,
West Virginia University School of Dentistry

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EDUCATION:

Ph.D.	Syracuse University, Syracuse, New York Major: Molecular Virology Minor: Microbiology	1969
M.S.	Syracuse University, Syracuse, New York Major: Microbiology Minor: Bacteriology	1967
B.S.	Norwich University, Northfield, Vermont Major: Biology	1964

APPOINTMENTS:

Academic Visitor, Department of Restorative Dentistry, School of Dental Medicine, National University of Singapore, Singapore.	July 1, 2008
Visiting Professor, (Honorary) Department of Oral Microbiology, School of Dental Medicine, Cardiff University Cardiff, Wales, UK	July 1, 2007- Dec. 31, 2007
Professor, Department of Pathology WVU School of Medicine	1990-present
Senior Microbiology Consultant for Microbiology, WVUH	2005-present
Antibiotic Resistance Analyst	2005-present

Director, Biofilm Research Laboratory for Translational Studies in Medicine, Dentistry and Industry	2005-present
Consulting Microbiologist, Allegheny General Hospital Microbiology and Virology, Department of Pathology, Pittsburgh, PA	2003
Adjunct Professor, Department of Microbiology, Immunology and Cell Biology WVU School of Medicine	2001-present
Adjunct Professor WVU School of Pharmacy	2001-present
Adjunct Professor, Department of Clinical Laboratory Sciences New Jersey School of Medicine and Dentistry, School of Medical Technology Newark, NJ	2003-2005
Clinical Professor, Department of Periodontics WVU School of Dentistry	1997-present
Graduate Faculty, Department of Medical Technology WVU	1990-2005
Director, Microbiology/Virology Laboratories, WVUH	1990-2005

I. HONORS/AWARDS/NOTEWORTHY ENDEAVORS

Prof. John G. Thomas, a clinical microbiologist for more than 41 years, returned from a 6 month Sabbatical, on January 5, 2008, as a Visiting Professor at Cardiff University School of Dental Medicine, Wales, UK. His primary purpose was to unmask the link between dental flora and ventilator associated pneumonia (VAP) via the endotracheal biofilm in a 25 patient ICU study.

In the past 12 months, Prof. Thomas has traveled greater than 100,000 miles, covering four continents, 16 countries, and has presented to greater than 15,000 scientists, dentists, and public health individuals integrating clinical microbiology, biofilms, antibiotic resistance and links between oral and systemic disease.

Highlights included: keynote speaker at the American Association of Endodontics in Philadelphia, Opening Session, (March); Symposium Presentation at World Dental Congress, CFDI, Dubai (October); Royal College of Physicians and Surgeons (Chartered 1599), Glasgow, (November); and the Eastman Dental School, College of London and New Castle University, New Castle, UK (December).

As a consequence of Dr. Thomas's Global research and education, he organized a three University Consortium, including WVU, Cardiff University and National University of Singapore (NUS). Utilizing an International Advisory Council, the Consortium will focus on clinical trials, antibiotic resistance, and selected infectious diseases.

- Appointed to the Scientific Advisory Council, American Dental Association, 2008
- West Virginia University Award for Distinguished Faculty 2007 (see page 15)
- *Alumni Association Achievement Award 2006.*
West Virginia University School of Dentistry
- *Award for Student Research Development 2006*
West Virginia University School of Dentistry
- Received 40 year pin, American Society of Microbiology

- August 1, 2006, FDA Approved for RCT (Randomized Clinical Trial of Silver containing ETT (endotrach tube)), following 3 year study of Ventilator-Endotrach-Lung (VEL) Model Tyco Healthcare Nellcor Division
- Appointed Waksman Foundation for Microbiology Lectures (ASM).
- Invited Keynote Speaker for Pfizer Asia-Pacific Educational Tour of 14 lectures through 6 countries spanning 29,000 miles in 21 days.
- WVU School of Dentistry
1st Place-Mentor for 3rd Year Student Research Day Project
3rd Place-Mentor for 3rd Year Student Research Day Project

II. PROFESSIONAL SOCIETIES

American Society for Hospital Pharmacists (ASHP)	1999-present
American Association for Dental Research	1998-present
American Anaerobic Bacteriology Society	1992-present
Pan American Society for Rapid Viral Diagnosis	1990-present
Infectious Disease Society of America	1989-present
American Board of Bioanalysis (ABB)	1987-present
South Central Association for Clinical Microbiology	1978-present
Area Director-Northern Ohio 1982, 1989	1982,1989
Area Director-Northern West Virginia 1996-1998	1996-1998
South Eastern Association for Clinical Microbiology	1978-present
American Society for Microbiology (40 Year Member)	1966-present
American Association for the Advancement of Science	1964-present
N. Y. Academy of Sciences	1964-present
Tissue Culture Association	1964-present

III. SCHOLARLY ACTIVITIES/PUBLICATIONS/INVITED PRESENTATIONS/ABSTRACTS

Publications reflected a growing awareness of the cost of biofilm associated diseases, particularly oral-pulmonary and chronic wounds, and the need for new strategies recognizing chronic infections and anti-Koch postulates.

1. Textbooks

- The Role of Biofilms in Device-Related Infections. Shirliff M and Leid J. Edited by J. William Costerton and John G. Thomas. "Biofilm Ventilation" Life Sciences. Springer Series on Biofilms. Jan 3, 2009.
- Disinfection and Decontamination: Principles, Applications, and Related Issues. Thomas, J., Nakaishi, L., Corum, L. "Antimicrobial Anti-infective Coated Medical Devices: Costs and Consequences of Biofilms" Chapter 14. CRC Press. Oct 4, 2007.
- Antimicrobial Susceptibility Testing Protocols. Thomas, J. and Rector, N. "Susceptibility-Testing Protocols for Antibigrams and Preventative Surveillance: A Continuum of Data" Chapter 7. CRC Press; May 22, 2007.

- Textbook of Diagnostic Microbiology, 3rd Edition. Mahon, C.R., Lehman, D.C. and Manuselius, G. Eds. "Biofilms: Architects of Disease." Chapter 31. Elsevier Press. Feb 10, 2006.
- (Association for Professionals in Infection Control and Epidemiology, Inc.) APIC Text of Infection Control & Epidemiology, 2nd Edition. Thomas, J. "Biofilms." Chapter 96. Assoc for Professionals in Infection Control and Epidemiology, Inc. January 1, 2005.
- Biofilms, Infection, and Antimicrobial Therapy. Thomas, J., Lynton, I., Rinde, H "Economic Impact of Biofilms on Treatment Costs." Chapter 2. CRC Press. Jan 1, 2005.

2. Manuscripts

- Wilson A, Martin P, Gray D, and Thomas J. Increase in Airway Resistance due to Endotrach Luminal Biofilm Aggregate. Chest. (Submitted Aug 2008)
- Polk DE, Weyant RJ, Crout RJ, McNeil DW, Tarter RE, Thomas JG, Marazita ML. Study Protocol of the Center for Oral Health Research in Appalachia (COHRA) Etiology Study. BMC Oral Health. June 2008: 8;18.
- Preshaw P, Novac M, Mellonig J, Magnusson I, Polson A, Giannobile W, Rowland R, Thomas J, Walker C, Dawson D, Sharkey D, and Bradshaw M. Modified-Reclose Subantimicrobial Dose Doxycycline Enhances Sealing and Roof Planning in Subjects with Periodontal Disease. J. Peridontol. Feb 2008: 79(3); 440-452.
- Editorial: Wise MP, Williams DW, Lewis MA, Thomas JG and Frost PJ. Impact of Poor Dental Health on Pneumonia. Editorial to Article Entitled "New Evidence of Risk Factors for Community-Acquired Pneumonia: a Population-based Study". Eur. Respir. J. June 2008: 31(6);1274-1284.
- Thomas, J. Biofilm Update: Importance to Clinical Microbiology Laboratory. Review in Medical Microbiology. G. Hall Ed. (Lippencott, Williams, and Wilkens) (Accepted)
- Thomas JG and Percival S. 8th Meeting of the Biofilm Club, Gregynog, Powys, Wales, UK. "Biofilms: Coming of Age" "Bacterial Synergy: A Common Theme Linking Infections in Chronic Wounds and Endotracheal Tubes/Ventilator Associated Pneumonia (VAP). Sept 5-7, 2007.
- Thomas, J. Microbiology 2006: Back to the Future. ADVANCE for Administrators of Laboratory. Dec 2007; 15(12):64.
- Oxley KS, Thomas JG, and Ramadan HH. Effect of ototopical medications on tympanostomy tube biofilms. The Laryngoscope Oct. 2007; 117(10):1819-1824
- Cross JL, Ramadan HH, and Thomas JG. The impact of a cation channel blocker on *Pseudomonas aeruginosa* (PA01) biofilm architecture. Otolaryngology. July 2007; 137(1):21-26.
- Thomas, J. and Nakaishi, L. Managing the Complexity of a Dynamic Biofilm (Article in Importance of Antiseptic Mouthrinses in the Daily Oral Care Regimen Supplement). J Am Dent Assoc. Nov 2006; 137: Suppl_3, 10S-15S.
- Ramadan, H., Sanclement, J., Thomas, J. Chronic Rhinosinusitis and Biofilms. Otolaryngology March 2005; 132(3):414-417.
- Sanclement, J., Webster, P., Thomas, J., and Ramadan, H. Bacterial Biofilms in Surgical Specimens of Patients with Chronic Rhinosinusitis. Laryngoscope. April 2005; 115(4):578-582.

- Livengood, R. and Thomas, J. *Rhizomucor*: a model for the emerging importance of mould susceptibility testing. Clin Micro Newsletter. Oct. 2006; 28(19):150-152.
- Roy J., Shakleya D., Callery P., and Thomas J. Chemical Constituents and Antimicrobial Activity of a Traditional Herbal Medicine Containing Garlic and Black Cumin. Afr J Trad, Comp and Alt Med. April 2006; 3(2):1-7.

3. Abstracts/Posters

Presented in 2008

- Thomas JG, Woods E, and Percival S. Biofilms, Microbial Imbalance and Synergy in Chronic Infections: Anti-Koch. ICCAC – Washington DC, October 24-26, 2008
- Thomas JG, Percival S, Woods E, Robinson P, Hayes A, and Malic S. Characterizing and Staging Biofilm Architecture with Quantitative Imaging and 3-D Animation. ICCAC – Washington DC, October 24-26, 2008
- Sarwari AR, Petros KO, Sager RB, Wilson A, Dedhia HV, Mullett CJ, Thomas JG, Miller-Canfield P, Slain D, Moffett K, Palmer, Jr HC. Impact of an Antimicrobial Stewardship Program on Antimicrobial Use and Resistance in Intensive Care Units (ICU). P18 - Poster Presentation, 2008 Annual Conference on Antimicrobial Resistance. June 23-25, Bethesda, Maryland.
- Sarwari AR, Petros KO, Sager RB, Mullett CJ, Thomas JG, Miller-Canfield P, Dedhia HV, Slain D, Moffett K, Palmer, Jr HC. Efforts to Influence Antimicrobial Use and Resistance at a Tertiary Care Institution Using Collaborative Multifaceted Interventions. S10 - Oral Presentation, 2008 Annual Conference on Antimicrobial Resistance. June 23-25, Bethesda, Maryland
- Thomas JG, Williams DW, Hooper SJ, Malic S and Cairns S. PCR DGGE to Unmask *Streptococcus mutans* in Endotrach Biofilms. IADR General Session – Toronto, June 1-5, 2008
- Thomas JG and Noore J. Comparative Efficacy of an Engineered Cationic Peptide against *E. faecalis*. IADR General Session – Toronto, June 1-5, 2008
- Thomas JG, Noore J, Ellis JS, and Gray D. Influence of pH and Eh upon Endodontic Irrigant Microbial Efficacy. IADR General Session – Toronto, June 1-5, 2008
- Williams DW, Thomas JG, Hooper SJ, Wise M, Frost P, Malic S, Cairns S and Lewis M. Profiling Microbial Diversity in Endotracheal Tube Biofilms. IADR General Session – Toronto, June 1-5, 2008
- Thomas JG, Williams DW, Malic S, Rowe WG. Linking Plaque and Endotrach Biofilm/Matrix by Structure and Composition. IADR General Session – Toronto, June 1-5, 2008

Presented in 2007

- Thomas J, Williams D, K Thomford and Crout R. “Using ‘Relative Resistance’ to Unmask Significant Planktonic Resistant Phenotypes in Chronic Wounds using a National Surveillance Database: Preventative Surveillance. FIS, Cardiff, Wales, UK. November 25-27, 2007.

- Thomas J, Williams D, Gray D, Nakaishi L, Crout R, and Marazita M. *Candida albicans* as an Indicator of Oral Microflora Imbalance in a Rural Population. FIS, Cardiff, Wales, UK. November 25-27, 2007.
- Stopek, J., Migliozi, J., Cai, C., Irfan, A., Tsai, S., Hotter, J. and Thomas, J. Bacterial colonization of suture biomaterials with varied substrate architecture and chemistry. Society for Biomaterials Annual Meeting 2007 Chicago, IL.
- Li, B. and Thomas, J.G. Nanotechnology Coatings for Potential Prevention of Biomedical Device-Associated Infections. Biomedical Engineering Society Annual Meeting 2007 Los Angeles.
- Thomas, J.G., Cannon, D.S., Harris, G.V., and Vaughan, W.D. Strategizing a dental-medical co-oral evaluation for the vented patient. IADR March 21-24, 2007 New Orleans.
- Thomas, J.G., Nakaishi, L.A., Ellis, J.S., and Kepner, D. Enterococcus faecalis-resistance endodontic pathogen not found in oral cultures. IADR March 21-24, 2007 New Orleans.
- Thomas, J.G., Gray, D.M, Crout, R., and Marazita, M. Unmasking *Candida albicans* as an emerging oral microbial signature. IADR March 21-24, 2007 New Orleans.
- Thomas, J.G., Parson, J., Nakaishi, L.A. Endotracheal Tube (ETT) Dental-Systemic Co-biofilm. IADR March 21-24, 2007 New Orleans.
- Thomas JG, Gray DM, Nakaishi LA, Parsons J, and Martens P. The long-term antibiofilm efficacy of an ETT silver releasing compound in a polymicrobial ventilator-endotrach-lung model. ASM March 2007 Quebec City, Canada.
- Thomas JG, Parsons J, and Nakaishi L. Silver coated endotracheal tube (ETT) and impact of dental-systemic co-biofilm. ASM March 2007 Quebec City, Canada.
- Thomas JG, Martens P, Gray DM, and Nakaishi L. Impact of ETT accretions on airway resistance in MV patients. ASM March 2007 Quebec City, Canada.

Presented in 2006

- Thomas, J.G., Carpenter, J., Martens, P., Gray, D., and Nakaishi, L. Imaging luminal location of the ETT accretions by CT Topographical radiography. ICACC 2006 San Francisco
- Thomas, J.G., Martens, P., Gray, D., Nakaishi, L., and Ortiz, M. Impact of ETT accretions on airway resistance in mechanically ventilated patients. ICACC 2006 San Francisco.
- Thomas, J., Sokos, L.G., Canfield, P., Gray, D. Linking Adverse Outcome of Fungemic Patient to Organism Resistant Phenotype: $BEC_{50} : MIC$. ASM 2006 Orlando
- Thomas, J., Martens, P., Gray, D., Nakaishi, L, Thomas, K. The Impact of Silver Ions Upon Oral/Dental flora Co-Biofilm Colonization in Endotrach (ETT) ASM 2006 Orlando
- Sessa, A., Thomas, J., Myers, A., Schwegler-Berry, D. Anti-biofilm Effect on Oral Rinses on an Engineered Tooth Model. IADR 2006 Orlando.
- Thomas, J., Gray, D., Nakaishi, L., Crout, R., McNeil, D., Weyant, R., Marazita, M. 3 Species Oral Microbial Signature from two Rural Populations. IADR 2006 Orlando.
- Thomas, J., Kepner, D., Styers, D. Unmasking Significant Periodontal Antibiotic Resistance. IADR 2006 Orlando.
- Vest, D., Ngan, P., Thomas, J., Crout, R., and Eckley, B. Microbiological Assessment of Orthodontic Patients after Removal of Orthodontic Appliances. IADR 2006 Orlando.

4. Invited Presentations/Workshops/Symposiums/Speaking Engagements

National Presentations reflected the maturity of our VEL Co-Biofilm model and its contribution to unraveling very expensive diseases, both morbidity and mortality wise.

- WV Annual Respiratory Therapy Meeting. Biofilms in 3-D. Wheeling, WV. Sept. 4, 2008.
- US Food and Drug Administration. Biofilms and Resistance. Bethesda, Md. June 19, 2008.
- Clinical Summary Booklet. Introduction and Review. Listerine. British Society of Dental Hygiene and Therapy (BJDHT). June 13, 2008.
- 2008 Microbiology Faculty Meeting. (Medi Media Educational Group) Anti-Infective Franchise. Ortho-McNeil Division. Janssen Pharmaceuticals, Inc. Fort Lauderdale, Florida. May 15-16, 2008.
- “Biofilms and Antibiotic Resistance: A Link?” Center for Veterinary Medicine (CVM) Staff College. FDA. Rockville, MD. June 19, 2008.
- “Wound Microbiology: A Fresh Look” in Satellite Presentation ‘Advancing Your Practice: Understanding Wound Infections and the Role of Biofilms’ Assoc. for Advancement of Wound Care (AAWC) Annual Meeting. Supported by ConvaTec and Bristol-Myers Squibb. San Diego, CA. April 24, 2008.
- Biofilms and Endodontic Infections: Unrecognized Synergy” Dentsply. Tulsa Dental. Tulsa, OK. June 12-13, 2008.
- American Association of Endodontics. Keynote Speaker. Unmasking Biofilms: Translating Microbiology into Advanced Endodontic Management. Philadelphia, PA. April 25, 2007.
- West Virginia University School of Dentistry. Oral Biofilms Links to Disease: Head to Toe. WVU Dental Research Day. February 7, 2006.
- Dentsply Endodontics Seminar. Keynote Speaker. Oral Biofilms Links to Disease: Head to Toe. Steamboat, CO. February 4, 2006.
- Dentsply Endodontics Seminar. Keynote Speaker. Connecting the Dots: Linking Disparate Facts. Steamboat, CO. February 1, 2007.
- HOST for the West Virginia University Center for Immunopathology and Microbial Pathogenesis lecture on “Biofilms (Microbial Communities).” March 23, 2006
- Mon Valley Dental Society. Oral Biofilms Links to Disease-Head to Toe. Bridgeport, WV. May 2006.
- Bio-Merieux-ASM. Measuring Microbiology’s Value in a Pay-4-Performance Environment. Orlando, FL. May 2006.
- Ortho-McNeil (Levo)-ASM. Antibiotics and Collateral Damage. Orlando, FL. May 2006
- Strategies for Minimizing Antimicrobial Resistance: Improving the Process. Pittsburgh, PA. June 2006.
- American Society for Clinical Laboratory Science Annual Meeting. Biofilms: Architects of Chronic Diseases. Chicago, IL. July 2006.

- American Society for Clinical Laboratory Science. Clinical Rounding—How we make it work in Microbiology. Chicago, IL. July 2006.
- Pathology Grand Grounds West Virginia University School of Medicine. Biofilm Scandals in the Oral Cavity: Architects of Disease. Morgantown, WV. August 2006.
- Dentsply. Today's Standards for Root Canal Cleansing. National Web-cast. Morgantown, WV April 11, 2006.
- Allegheny General Hospital. Biofilm Scandals in the Ventilated Patient: Links to Pulmonary Infections via Up-Regulation. Pittsburgh, PA. August 2006.
- Virginia Dental Society. Oral Biofilms Links to Diseases-Head to Toe. Roanoke, VA. September 2006.
- Tyco Healthcare Nellcor. Biofilm Scandals in the Ventilated Patient: Links to Pulmonary Infection Via Up-Regulation and Colonization with Dental Flora. Pleasanton, CA. September 2006.
- Tulsa-Dentsply. Bio-Pure Webcast. Tulsa, OK. September 2006.
- Infectious Diseases Epidemiology and Surveillance (IDEAS). Biofilms: The Scourge of Infection Control. Harrisburg, PA. October 2006.
- AB BioDisk. When "S" Does Not Mean Success. Pittsburgh, PA. October 2006.
- American Institute of Oral Biology. Biofilm Scandals in the Oral Cavity. Palm Springs, CA. October 2006.
- American Institute of Oral Biology (AIOB). Links to Systemic Infections: Head to Toe. Palm Springs, CA. October 2006.
- WVU Department of Obstetrics and Gynecology Grand Rounds. Scandals in OB/GYN Microbial Pathogenesis: Anti-Koch and Biofilms. Morgantown, WV. October 2006.
- AB Biodisk. Antifungal Susceptibility Testing: Clinical Needs, Hospital Wide. Cincinnati, OH. November 2006.
- AB Biodisk. Connecting Anti-Fungal Susceptibility Testing and the P&T Committee. Cincinnati, OH. November 2006.
- Ortho-McNeil. Infectious Diseases and Antibiotic Resistance: Use of Electronic Surveillance. Clarksburg, WV. December 2006.
- Ortho-McNeil. High-Dose, Short-Course, Antibiotic Therapy for CAP. Clarksburg, WV. December 2006.

International

- "Communication and networking is what a biofilm does: An interview with microbiologist Professor John G. Thomas, USA, about the latest revelations on oral microbes" The Dental Tribune International: Asia Pacific Edition (Printed in 5 Languages). 2008; 4(6):18-19.
- "Changing Paradigms in Oral Microbiology: Probiotics and Useful Biofilms" Official Launch of PerioBalance. Satellite Symposium. Advanced Oral Care with Probiotics. British Dental Assoc. Supported by G.U.M (Sun Star) Manchester, England. April 30, 2008.
- "Changing Paradigms in Oral Microbiology: Growing significance of Biofilms" British Dental Assoc. Annual Meeting. Supported by Philips. Manchester, England. April 2, 2008.
- Asia-Pacific Tour III: April 2008
 - "Changing Paradigms in Oral Microbiology: It's Growing Significance in Systemic Disease" in Satellite Symposium. 'Managing Biofilms for Optimal Oral Health'

- Suntec Singapore International Convention and Exhibition Centre. Sponsored by J&J. April 5, 2008.
- “Changing Paradigms: Linking Oral Biofilms, VAP and *Candida albicans* with innovative Therapeutics/Diagnostics (Theragnostics)” National University of Singapore Hospital. Grand Rounds. Singapore, April 4, 2008
 - “Oral Biofilms and Systemic Health: Is there a connection?” National University of Singapore School of Dental-Medicine. Singapore. April 3, 2008.
 - “Biofilms and Oral Health Management” University of Indonesia, School of Dentistry. April 1, 2008
 - “Biofilms and Oral Health: A link to Systemic Diseases” Airlangga University. Surabaya, East Java, Indonesia. April 2, 2008 (Oldest Dental School Est. 1928)
 - ”Control of Plague: A Biofilm Perspective” Royal Indian University, Mumbai, India. April 9, 2008
 - Microbial Diversity in Biofilms. Cairns S., Williams D., Thomas J., Hooper S., Wise M., Frost P., Malic S., Lewis M., Harding K., Leaper D. World Union of Wound Healing Societies – Toronto, June 6, 2008
 - Asia Pacific Educational Tour.
 - Listerine Symposium and Panel Meeting. Biofilms: Scandals in the Oral Cavity. Jakarta ADPC. April 28, 2007.
 - School of Dentistry. Biofilms: Scandals in the Oral Cavity. April 30, 2007.
 - School of Dentistry. Translational Research: Oral to Systemic. Taipei. May 4, 2007.
 - School of Dentistry. Translational Research: Oral to Systemic. Hong Kong. May 2, 2007.
 - Eastman Dental Institute. Keynote Speaker. Scandals in the Oral Cavity. London, England. April 20, 2007.
 - Established International recognition and created an Asia-Pacific Advisory Committee for Oral Health Awareness
 - Asia Pacific Educational Tour. Biofilms: Oral and Systemic Diseases
 - Thai Periodontal Society. Plaque Biofilm and Oral Health. Bangkok, Thailand. April 5, 2006.
 - Thai Society for Public Health Dentistry. Relationship of Oral Health to General Health—Myth or Truth AND Prevention of Periodontal Diseases in ANC Clinic. Bangkok, Thailand. April 5, 2006.
 - International Dental Exhibition and Meeting (IDEM) Symposium on Minimal Intervention. Oral Biofilms: Architects of Disease, Head to Toe. Singapore. April 7, 2006.
 - Global Expert Panel Meeting. Mouthrinses: Impact on Oral Health. Singapore. April 8, 2006.
 - National University of Singapore Faculty of Dentistry Lecture. Changing Paradigms in Oral Microbiology: Its Growing Significance in Systemic Diseases. Singapore. April 10, 2006.
 - University of Hong Kong. Biofilm Management and Control AND Strategies for Combating the Bacterial Plaque Biofilm. Hong Kong. April 11, 2006.

- Malaysia Dental Association Lecture. Oral Biofilms: Architects of Disease, Head to Toe AND Mouthrinses: Impact on Oral Health. Kula Lumpur, Malaysia. Thursday, April 13, 2006.
- FDI World Dental Federation Lectures. Biofilm and Oral Diseases AND Strategies for Combating the Bacterial Plaque Biofilm AND Biofilms and Implants. Taichung, Taiwan. April 15, 2006.
- Peking University School of Dentistry lecture. Strategies for Combating the Bacterial Plaque Biofilm. Beijing, China. April 17, 2006.
- Pfizer Round Table. Biofilm Scandals in the Oral Cavity: Architects of Disease. London, England. July 2006.

IV. TEACHING/EDUCATION/MENTORING/PRECEPTORSHIPS/FACULTY VISITATIONS

In April, 2008, Prof. Thomas circumvented the Globe on a 25,000 mile, 4 nation, Asia-Pacific tour highlighted by 3-D animated presentations at the IDEM in Singapore (April), Singapore National Hospital, NUS, the Royal School of Dentistry in Mumbai, and the School of Dental Medicine in Jakarta. He finalized his world travels with Key Note addresses for the introduction of Oral Probiotics, Manchester Stadium, UK (May), Advanced Wound Care Management in San Diego, CA, USA (April) and Biofilms and Antibiotic Resistance, Center for Veterinary Medicine, FDA (June).

As a result, Dr. Thomas also initiated a dental school intellectual exchange of 3rd year dental students between Cardiff University and WVU.

1. Teaching/Courses/Cardiff University, Wales, UK

- Dental Microbiology, 1st year (3 lectures)
- Advanced Microbiology, Post Graduate (3 lectures)

2. Teaching/Courses/WVU

Contact HRS 40hrs

- Micro Immuno (Medical) 721 (9 lectures)
- Micro Immuno (Dental) 702 (6 lectures and 4 laboratories) – Taught from Cardiff University, by video conference.
- Dental Hygiene with Dr. Wanker (1 lecture)
- Periodontics (3rd Year) Course (1 lecture) Dr. Crout
- 761T (Course Director, Special Microbial Problems in Endodontics, 4 credit hours) Spring (25 lectures, 6 labs)
- Pathology 751 (2nd Year Medical Students) (9 lectures)
- Tropical Medicine Course: Infectious Disease (3 lectures).

3. Mentoring

A. Dental (3rd Year Dental Student Research)

Contact HRS 100hrs

2008

- Interfaced with 3rd year Dental Students at Cardiff University

2007

- John Pyle: “Synergy of Oral-Systemic Isolates”
- Misty Short: “The Potential Use of Silver-Impregnated Bristles in a Toothbrush.”
- Tony Smallwood and Cody Lockhart: “Microbial Synergy Comparing an Engineered Tooth Model to Broth”

B. Undergraduate (WVU Pre-Dental)

Contact HRS 20 hrs

2008

- Curtis Dean: “Coaggregation of Biofilm Organisms” WV-INBRE Student.
- 2007
- Adam Myers: “Anti-Biofilm Effect of Oral Rinses on an Engineered Tooth Model.”
 - Jason Ellis: “MTAD Effectiveness using ZOI Assay in Periodontal Disease.”
 - Emily Banser: “MTAD Effectiveness using ZOI Assay in Periodontal Disease.”

C. Dental Post-Doctoral (Master’s Level)

Contact HRS 20 hrs

2008

- Geoffrey Cunningham, DDS, MS Orthodontics. “The Effect of Lasers on Regeneration of Tissue Post Biofilm Treatment.”

2007

- Lindsay Jackfert D.D.S: “A Comparison of Bacterial Adherence on Standard Orthodontic Brackets and Titanium Miniscrew Implants: An In Vitro and In Vivo Study.”
- Kent McBride D.D.S: “An in Vitro Assessment of an Engineered Cationic Antimicrobial Peptide Diseases (eCAP) against planktonic strains of E. faecalis.”

D. Medical/Post-Doctoral Research (3 month rotation)

Contact Hours 100 hrs

2006

- Jeremy Parsons, 4th Medical Student: “Endotracheal Tube (ETT) Dental-Systemic Co-Biofilm and the Effect of Azithromycin” (Supported by Pfizer)

E. Pharmacy (1 month rotation)

2006

- Cheryl Neace. 4th Year Pharmacy Rotation
- Steve Cincotta. 4th Year Pharmacy Rotation

V. SERVICE ACTIVITIES (WVUH CLINICAL LABORATORIES)/ADMINISTRATION (COMMITTEES)

Service activities reflected a shift in emphasis from Director of Microbiology to Translational Research, although biofilm related activities were emphasized in WVUH. The major activity was the

development and implementation of the Antibiotic Therapy Guide, 2nd Edition, in concert with WVUH Pharmacy.

1. Committees

A. International

- Member of the Microbiology Faculty of the Council for Appropriate and Rational Antibiotic Therapy (C.A.R.A.T) (Supported by Ortho-McNeil)
- International Dental Exhibition and Meeting (IDEM) Advisor for Asia-Pacific Committee on Antiseptic Oral Mouthrinses (Supported by Pfizer)

B. National

- **Nebraska Safety Board of CMTs (Clinically Modified Tetracycline)**
Member, NIH Data and Monitoring Board, National Institutes of Health (1 RO1 DE12872-01A2) Low Dose Doxycycline Affects on Osteopenic Bone Loss, Principal Investigator, Dr. Jeffery Payne, University of Nebraska, 2001-2006.

B. WVUH

- International Health Institute (IHI) (Line Sepsis), Committee Member
- International Health Institute (IHI) Ventilator Associated Pneumonia, Committee Member
- Infection Control Committee
- Pharmacy and Therapeutics Sub-Committee

C. WVU School of Medicine

- Center for Immunopathology and Microbial Pathogenesis (CIpMP) Coordinating Committee

D. WVU School of Dentistry

- Research Committee
- Admission Committee

2. WVUH Microbiology

A. Hospital Focus

- Developed Biofilm MBEC (Minimal Biofilm Elimination Concentration) for: Systemic (BSI), Urinary, Pulmonary, Dental, and Fungal Diseases.
- Published unique signature for BSI by 6 WVUH service areas
- Modified and updated the Multi-Disease Risk Assessment (MDRA) to reflect newer ICU patient criteria
- Developed Pharmacy and Therapeutics new anti-infective card 2006, 2007, 2008
Microbiology consultant for the WVUH Pharmacy Antimicrobial Rotation: ICU/BMTU
- MERCK STAR Program: Strategies for Reducing Antimicrobial Resistance
- Mountain State Oral-Facial Microbiology Laboratory
Update on report results and newest antibiotic therapy and dosing.

B. New Laboratory Tools

- Poloxamer Biofilm Resistance
- In vitro – in vivo Chronic Wound Model
- 3 University Consortium to study Resistance, Biofilms, and Food Borne Diseases.

VI. TRANSLATIONAL RESEARCH LABORATORY/EXTRAMURAL BIOMEDICAL GRANT SUPPORT/CONTRACT WORK/CONSULTATION (DENTISTRY/MEDICINE)

While in Cardiff, translational research focused on organism detection using a combination of molecular methods for Viable, But Non-Cultivable (VBNC) microorganisms in VAP emphasizing 16S RNA PCR-DGGE (Denaturing Gradient Gel Electrophoresis), Confocal Laser Scanning Microscopy using PNA FISH for yeast, PFGE for typing isolates, PCR and SEM/X-ray microanalysis for biofilm matrix elemental composition. The project was conducted with Dr. David Williams, Reader in Microbiology, and Prof. M. Lewis, Professor of Oral Medicine, Head of Oral Surgery Medicine and Pathology, and President of the Royal College of Physicians and Surgeons, Glasgow University.

1. Current Biomedical Support

A. Covidien Healthcare, Nellcor Division (Formerly Tyco)

Assessment of Silver Coated Endotrachs in Biofilm Formation (“Guardian and Sentinel”)

- In Spring 2008, Covidien expanded the responsibilities of Dr. Thomas in a new 2 year Grant to include research on anti-infectives and other indwelling medical devices.
- Principal Investigator: John G. Thomas (\$136,000). Expanded to 6 workstations (\$380,000) supporting additional graduate student and lead technologist. Supports, 50% of PI Salary and one full-time technologist.
 - An industry based study investigating biofilms on a silver anti-biofilm endotrach tube (ETT) and prevention of VAP (ventilator associated pneumonia).

“Guardian” ETT Pressure Drop Study

- Principal Investigator: John G. Thomas
 - A prospective, multi-center, controlled study to evaluate the safety and the effect of the Guardian on the extubated endotracheal tube’s Pressure Drop from intubated subjects who require more than 24 hours of mechanical ventilation.

B. Center for Oral Health in Rural Appalachia (COHRA)

Genetic Factors Contributing to Oral Health Disparities in Appalachia NIDCR 1-R01-DE014899 (2002-2009)

- Principal Investigator: Mary Marazita. Support 15% of salary and full-time technologist (\$224,993).
 - NIH Grant, in conjunction with The University of Pittsburg, investigating oral health disparities in rural West Virginia and Pennsylvania.

Awarded new Microbiology Supplemental Grant. NIDCR 1-R01-DE014899-S1 (2006-2009)

- Principal Investigator: J. Thomas, Supports 50% of PI salary and 60% of technologist salary (\$224,000).
 - NIH Grant, in conjunction with the University of Pittsburg, which investigates the Oral Microbial Signature (OMS).

C. Tyco Healthcare, US Surgical Division

Anti-infective Suture Polymer

- Principal Investigator: J. Thomas, Support of 25% of PI salary, 3 technologists and one Ph.D. (\$430,000)
 - Study evaluating methods of preventing Biofilm formation on anti-infective polymer sutures.
 - Introduced non-culture methods: BacTiter Glo and PNA-FISH.

D. Pfizer (Phase II)

Immune Modulator, Azithromycin and Endotrach Intra-Luminal Biofilms

- Principal Investigator: J. Thomas Phase II (\$12,000)
 - Study to determine effect of AZ on luminal biofilm development, when administered at different times.

E. West Virginia University Eberly College of Arts and Sciences

- Principal Investigators: G. O'Doherty and J. Thomas. (\$40,000)
 - Study to measure synthetic polypeptides on biofilms in VAP.

F. KeyBay Pharma, Pittsburgh, PA

Use of Engineered Cationic Polypeptides (eCAP) as Anti-infectives in Endodontic Infections

- Principal Investigator: J Thomas. Supported 40% overhead and one full time Ph.D. Post-Doc (\$71,000)

G. Tulsa – Dentsply (Endodontics)

The Use of BioPure MTAD as an Anti-Biofilm Irrigation in Endodontic Infections

- Principal Investigator: J. Thomas. Supported 40% overhead and one full time Ph.D. Post-Doc (\$75,000)

H. West Virginia University AO Foundation

A Pilot Study of Interleukin-12 Local Delivery for S. aureus Infection Prevention

- Principal Investigators: Bingyun Li and J. Thomas.

2. Potential Biomedical Support – Ongoing Preliminary Studies

A. James Ge

New B-lactam antibiotics

- Principal Investigator: J. Thomas

B. Carl Genberg – Ceragenix

Impact of a Nebulized Novel, Anti-Infective on the Colonization and Development of our Endotracheal, Lumenal Biofilm Formed under COPD Respiratory Environment.

- Principal Investigator: J. Thomas

C. Donal Biek – Cerexa

Impact of a Novel Anti-Infective in the Colonization and Development of an Endotracheal, Lumenal Biofilm Under COPD Respiratory Environment.

- Principal Investigator: J. Thomas

D. DRG (Drug Related Group) (WVU)

Investigation of DRGs and Costs

- Principal Investigator: J. Thomas and P&T Antibiotic Sub-Committee

VII. OUTREACH/DISTANT LEARNING (WEB-BASED LEARNING)/COMMUNITY SERVICES

Outreach activities expanded considerable with international collaboration established during the Asia Pacific Educational Tour with China continuing to use the MDRA form. Prof. Thomas also spent considerable time updating the interactive WVU website so that it serves as an educational source for national and international collaborators.

Incorporation of the Camtasia Studio Program into the 19th Annual Symposium enabled anyone world-wide to access the Program, utilizing international speakers, collaborating with Dr. Thomas, and maximizing education, globally.

- Thomas et al. 19th Annual Microbiology One Day Symposium. Oglebay Park, Wheeling, West Virginia. September 25-26, 2008.
- Thomas et al. 18th Annual Microbiology One Day Symposium. Stonewall Jackson Resort, West Virginia. September 24-25, 2007.
- Updated online Multi-Disease Risk Assessment (MDRA) form for clinic use in China: <http://www.hsc.wvu.edu/som/pathology/Facultybio/thomas.asp>
- Created new WVU website for “Clinical Tools” and “Educational Resources.”
- Created 4 “Mini-Microbiology” presentations posted on my webpage, which cover 1. Biofilms, 2. The Medical-Dental Link, 3. The VEL Model and 4. Microbiology.

VIII. ACKNOWLEDGEMENTS AND RECENT AWARDS

- **WVU Faculty Recognition Teaching Award**, March 2, 2007.
Presented by WVU President, David C. Hardesty Jr. and the Honorable Joseph Manchin, III, Governor of the State of West Virginia

Introduction by a WVU Professional Student:

“I stand before you today to introduce you to Dr. John Thomas, husband of Penny, who is also with us tonight, father of three daughters, and a valuable asset to the WVU community, the State of West Virginia, and the nation. While I have never had Dr. Thomas in class, his reputation in the classroom and the laboratory greatly precedes him. A veteran of the WVU Hospital and Health Sciences campus since 1990, Dr. Thomas is a familiar face and lecturer to Dentistry, Medical, Medical Technology, and Pharmacy students alike.

A microbiologist by trade, some of Dr. Thomas’s titles include: Senior Microbiology Consultant and Antibiotic Outcome Director, Director of the Biofilm Research Laboratory, WVU School of Dentistry’s Director of Periodontics, and Director of the WVU Hospital’s Microbiology and Virology Laboratories. Needless to say, Dr. Thomas has poured his heart and life into WVU and the health-field. His list of publications, presentations, and awards seems nearly endless, and his dedication and expertise in his field is known around the world, as he has presented in the U.S, Europe, and Asia. In fact, Dr. Thomas just recently concluded a 6 country, 14 lecture tour that saw him trekking across more than 29,000 miles of terrain as the keynote speaker of Pfizer’s Asia-Pacific Educational Tour. On a local note, however, Dr. Thomas has also sponsored the Microbiology Symposium since 1993 and continues to profess that “teaching” is the “best part of (his) academic career,” a claim which all of his students vividly attest to.

An “enthusiastic” teacher in the classroom, Dr. Thomas’s passion, energy, and enthusiasm also does not miss a beat in the laboratory. In fact, the “Dental Tribune” also known as “The World’s Dental Newspaper” quoted Dr. Thomas in an October 2006 feature of him saying, “My job is so fascinating it keeps me awake at night. I think about it all the time.” This “thinking” undoubtedly pays off, as his research alongside CollaGenex Pharmaceuticals led to the establishment of the Mountain State Oral Facial Laboratory, which is one of only seven of its kind in the United States.

Dr. Thomas’s most recent research is proving to leave its mark as well. Operating under very generous and well-deserved grants from Tyco/Nellcor, Tyco/US Surgical, Pfizer, and the Center for Oral Health in Rural Appalachia, Dr. Thomas has been focusing on ventilator-associated pneumonias as a leading cause of hospital-associated infections in the ICU. His research has led him to conclude that dental caries and periodontal disease, alongside other bacteria, colonize in the endotrach and ultimately lead to pneumonia. Thus, Dr. Thomas, as a precautionary note, has stressed that dental evaluations should be conducted on intubated patients, as the link between oral health and pulmonary disease is a very real one. In addition, further research and inventions under Dr. Thomas’s lease regarding this matter have proved very promising and will undoubtedly save countless lives, lives that once would have been lost to ICU pneumonia.

While Dr. Thomas’s teaching responsibilities and research demands call for frequent 70 to 80 hour work weeks, he still manages to find time to do other things that he loves. And avid runner, kayaker, and hockey goalie, Dr. Thomas is also an expert snow skier and volunteers his time and his talents to Wisp Mountain and the National Ski Patrol. In fact, Dr. Thomas had to switch shifts with a fellow ski patroller to make it to tonight’s [meeting].

While it is true that I could stand here and talk to you about Dr. Thomas's achievements, contributions, and service to WVU and the medical community all night, I will simply close by saying that I believe Dr. Thomas has been answering the call since he first stepped foot on WVU's campus some seventeen years ago, and I know that he epitomizes the Mountaineer Spirit. So, please join me in welcoming Dr. John Thomas."

- **International Peer Recognition:**

The following email was sent to the School Faculty at Newcastle University, UK, by an Endodontic Staff member on December 3, 2007:

"Dear All,

I was stunned to see notices around the school advertising a lecture by John Thomas on 5th December, 2007.

For those who have not met him before, he is one of the most exciting speakers I've ever encountered – one not to be missed unless you have a good reason.

He will give a thrilling and perhaps alarming account of human biofilms and leave the audience in no doubt that the actions we take and the drugs we apply in the management of oral biofilms have far-reaching effects throughout the body.

This is an absolute top-notch speaker and I encourage you to attend,
JW"

- **Review of Sabbatical on Jan 25,2008 from Cardiff University, School of Dental-Medicine, Wales, UK.
July 1 – Dec 31, 2007.**

"Dear [Chair, Dept of Pathology, WVU]

Re: Professor John Thomas

I am writing to thank you for enabling Professor John Thomas to spend a six-month period of sabbatical leave in my department here in Cardiff University. I must say that I believe that this particular period of sabbatical study has been one of the most productive six months that I can remember in recent years. John has been tremendously successful in achieving his research aims whilst learning contemporary molecular biology techniques from Dr David Williams, Reader in Microbiology within the department. I am in no doubt that a number of scientific publications and further research funding will develop out of the work that John has performed over here the past six months. I was also delighted that following collaboration with the School of Medicine, John was able to further his research into endo-tracheal and ventilator associated pneumonia. The targets we had set for this particular part of the research were easily achieved and indeed the clinical material was well in excess of what we had hoped for.

In addition to achieving the research goals based in the laboratory and clinics, John contributed to the undergraduate teaching programme for our dental students. I must say that the feedback from this contribution was extremely positive. As I am sure you will know it is extremely difficult not to be enthused about microbiology from John's style of lecturing.

John integrated incredibly well with our research team, both with our PhD students and postdoc scientists. He is truly missed now and I hope that it will be possible in the future for him to spend a further period of time here in our Dental School. As I have indicated, I have no doubt that due to the extreme success we have achieved in the past six months that ongoing productive research collaboration will now occur. It has been an absolute pleasure having John in the Faculty and I would wish it to be recognized at West Virginia University that Cardiff University has truly appreciated John's period of time here and he has represented West Virginia University in a superb way.

Yours sincerely,

[Head of Oral Surgery, Medicine, & Pathology]

Please Note:

A complete CV (>100 pages) highlighting multiple awards, >500 presentations, >70 publications, and outlining the accomplishments of over 40 years as an international educator and global microbiologist is available upon request. Included are topics such as Dr. Thomas's time as a USA Army Captain, stationed at Letterman General Hospital, Presidio, San Francisco, CA, his membership of the Charter Faculty of the North East Ohio University, College of Medicine (NEOUCOM), and his time spent working as a Researcher and teacher in Moscow and Prague as part of Eisenhower International.