

Abbreviated Curriculum Vitae
Promotion and Tenure File
10/01/2009-6/1/2011

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
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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:

Adjunct Faculty and Guest Lecturer, School of Health Related Professionals, University of Medicine and Dentistry of New Jersey (UMDNJ).	Oct 2010- present
Academic Visitor, Department of Restorative Dentistry, School of Dental Medicine, National University of Singapore, Singapore.	July 1, 2008- present
Visiting Professor, (Honorary) Department of Oral Microbiology, School of Dental Medicine, Cardiff University Cardiff, Wales, UK	Dec. 2007- present
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	2003-2004
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

I. HONORS/AWARDS/NOTEWORTHY ENDEAVORS

- **1st Place Laboratory Research Abstract Award**, Annual Fall Symposium in Advanced Wound Care, 2010 SAWC, Sept 23-25, 2010, Anaheim, CA. John G. Thomas, PhD, Hamed Motlagh, and Steven Percival. “Creating and Instituting a Global MRSA Tracking Network.” “Global Microbiology/ International Educator” ‘Diversity’ is the necessity of Translational Research survival and our Biofilm Research Laboratory (BRL) expanded into adjacent clinical diseases and education including:

 1. Infant VAP and the development of an infant VEL Simulator duplicating the NICU environment with use of OX-174, a virus that had properties in MV similar to H1N1.
 2. The use of “probiotics” as “replacement therapy” in 1) oral infections (periodontal diseases), maximized in 2) chronic wound infections and our development of a first ever patent-applied-for Triphasic Wound Model, integrating eucaryotic, procaryotic, and biofilms with *Lactobacillus reuteri*.
 3. The unmasking of our Hypothesis that eucaryotic tumors mimic procaryotic biofilms and successful intervention of both, simultaneously, is probably best achieved through anti-tumor-like therapy, particularly in oncology patients. These properties could be uncovered using a new, able-to-be-patented, poloxamer-tumor model (Merck).
 4. A significant shift in modeling from *in vitro* to *in vivo* assessment, using IVIS, a real-time assay, employing bioluminescent bacteria and mice
 5. Model development for tracking antibiotic resistance in the adult and infant VEL Simulators and chronic wounds. A growing consequence of both is the increase in MDR (Multi-Drug Resistance), and we have developed a tool (*P. aeruginosa* strains) to demonstrate the increased transfer of genes during biofilm growth.
 6. Lastly, the use of our considerable clinical microbiology experience to track and unmask unique organism profiles rapidly by imaging, which could be associated with bioterrorism. Here, we focused on imaging of individual colonies in a method developed at Purdue University by a friend and collaborator, Dr. Paul Robinson (BARDOT, Bacterial Rapid Detection using Optical Scattering Technology).
- Appointed to the Scientific Advisory Council, American Dental Association, 2008, 2009, 2010

- West Virginia University Student Research Development Award, School of Dentistry, 2003, 2006, 2009.
- Asked by Colleagues to Convene and Direct First Asia Pacific Biofilm Congress, Wuhan, China, April 2011 and Integrate with Asia-Pacific Tour V to Australia and New Zealand, April 2011.
- CDC Permit allowed for accumulation of international specimens focusing on MRSA and repository from six international sites.
- Research collaboration included site at Hong Cong University and Cardiff University with major research in Silver gauzes and wound care supported by AMS (Advanced Medical Solutions, Cheshire England, Dr. Steven Percival).
- Posters and abstracts were presented at 3 international meetings.
- The original Tri-University Consortium for biofilm studies was expanded to include significant input and specimens from Queensland University Australia (Dr. David Patterson) and National Health Laboratories, South Africa (Dr. Adriano Duse).
- Studies in mechanical ventilation and endotrach colonization expanded to include the I-VEL (Infant Ventilator Endotrach Lung Simulator) with two grants submitted based on these studies with enhanced use of non-invasive techniques employing animals and IVIS with bioluminescent bacteria.
- National and International Education continued to be a focus with enhancement of Webinars and expansion of the Website to include more mini-micro series and presentations utilizing this rich resource. Rutgers University (UMDNJ) became a user of the website for its course program in laboratory medicine for medical technologist in graduate education.

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. SCHOLARALY ACTIVITIES/PUBLICATIONS/INVITED PRESENTATIONS/ABSTRACTS

Publications reflected a growing diversity in research focus, and expanded the topics to include biofilms in Chronic Wounds, the use of a mixed or cocktail probiotic, and in unique areas particularly a “trilogy” (Oral probiotics, gut flora and VAP) that included:

1. The oral systemic link and the relationship of changing microbial populations and colonization, “birth to death”
2. The role of biofilms in chronic wounds and the potential therapeutic role of probiotics, particularly *Lactobacillus reuteri*. (Probiotics)
3. The continuing saga of the 3 species OMS (Oral Microbial Signature) as sensitive indicator of environmental pressures and a predictor of oral status and untoward outcomes. (COHRA).
4. Scholarly activity reflected an expansion of the biofilm research focus to include chronic wounds in infant studies suggesting an oral systemic link. This also included a strong shift towards application of Probiotics both in the oral and the wound application with significant emphasis on the TriPhasic PLUS Wound Model, an *in vitro*, *in vivo* simulator of the chronic wound environment.

- **Textbooks**

- **2011**

- Thomas JG, Motlagh H, Posey SB, Percival S. *The Role of Microorganisms and Biofilms in Dysfunctional Wound Healing: Wound Care*. In: Advance Wound Repair Therapies. Woodhead Publishing. London, England. David Farrar, Editor.

- **2010**

- Thomas JG, Hayes MI, and Petros K. *Clinical Application of Non-Antibacterial Tetracyclines in Clinical Applications of Non-Antibacterial Tetracyclines Special Issue Pharmacologic Research on Non-Antimicrobial Tetracyclines*. Editors: Golub L, and Greenwald B.
- Thomas JG. The Oral Biofilm: The Perfect Relationship between Reservoir of Disease and Transmitter of Biofilms Disease. *Disease Transmission in Preventing Dentistry and Public Health*. Editor: Burgheri JP.
- Thomas JG. The Oral Flora: The Most Diverse and Unique Biofilm Community in *Homo sapiens*. *Oral Microbial Ecology*. Ed: Jakubovus N. New Castle University. New Castle, England.
- Thomas JG. Linking Ventilator Associated Pneumonia *In Vitro* to Ventilator Associated Pneumonia *In Vivo*. Editor: Wise MP and Saayman AG. In *Current Respiratory Medical Reviews, Pulmonary Infection and Critical Care*. Cardiff University, Wales, UK.
- Thomas JG, and Williams D. *Biofilms and Wounds: A Unique Alliance in Chronic Wounds*. Editor: S Percival.

- **2009**

- Thomas JG, Posey SP, Namsupak A. *Probiotics: The Link Between Beneficial Oral Bacteria and Total Health*. Sherman Oaks, CA. Health Pointe Press; 2009.
- Thomas JG, Nakaishi L, Corum L. Ch 14. Consequences of Biofilms on Indwelling Medical Devices: Cost and Prevention. In: Manivannan G, ed. *Disinfection and Decontamination: Principles, Applications, and Related Issues*. Boca Raton, FL: CRC Press; 2008:289-338.

- Thomas JG, Posey SP. Biofilms. In: *APIC Text of Infection Control and Epidemiology - 3rd Edition*. Washington, DC: APIC; 2009;94,94-1
 - 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.
 - Thomas JG. *Probiotics: The Key to a Healthy digestive and Immune System: The Body's Partner for Good Health*. Sherman Oaks, CA. Health Pointe Press; 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 Antibiograms and Preventative Surveillance: A Continuum of Data" Chapter 7. CRC Press; May 22, 2007.
 - Thomas JG, Litton I, Rinde H. Ch 2. Economic Impact of Biofilms on Treatment Costs. In: Pace JL, Rupp ME, Finch RG, eds. *Biofilms, Infections, and Antimicrobial Therapy*. Boca Raton, FL: CRC Press; 2006: 21-38.
 - 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.
- **Manuscripts**
- 2011**
- Percival SL, Slone W, Linton S, Okel T, Corum L, Thomas JG. Use of flow cytometry to compare the antimicrobial efficacy of silver-containing wound dressings against planktonic *Staphylococcus aureus* and *Pseudomonas aeruginosa*. *Wound Repair Regen*. 2011;19(3):436-41.
 - Percival SL, Slone W, Linton S, Okel T, Corum L, Thomas JG. The antimicrobial efficacy of a silver alginate dressing against a broad spectrum of clinically relevant wound isolates. *Int Wound J*. 2011;8(3):237-243.
 - Slain D, Sarwari AR, Petros KO, et al. Impact of a Multimodal Antimicrobial Stewardship Program on *Pseudomonas aeruginosa* Susceptibility and Antimicrobial Use in the Intensive Care Unit Setting. *Critical Care Research and Practice*. Vol 2011, Article ID 416426, 5 p.
 - Olson JC, Cuff CF, Lukomski S, et al. Use of 16S ribosomal RNA gene analyses to characterize the bacterial signature associated with poor oral health in West Virginia. *BMC Oral Health*. 2011;11:7.

- Thomas JG, Orr B. The Cost of Hospital Associated Infections. *Advance for Administrators of the Laboratory*. April 2011.

2010

- Thomas JG, Sloan W, Linton S, Okle T, Corum L, and Percival S. *The Efficacy of Silver Alginate: Corrected Zone of Inhibition (Large ZOI) of Over One-Hundred Clinical Isolates: Influence of pH Phenotype in Hospital Location*. *Wound Regeneration*
- Thomas JG, Linton S, Corum L, Sloan W, Brundage K, and Percival S. *Use of Flow Cytometry (FC) to Compare the Efficacy of Silver Containing Wound Dressings Against Staphylococcus aureus and Pseudomonas aeruginosa*. *Wound Regeneration*
- Williams DW, Thomas JG, Hooper SJ, et al. *Profiling Microbial Diversity in Endotracheal Tube Biofilms by a Culture Independent Technique*. *British Journal of Microbiology*.
- Olson J, Cauf C, Lukomski S, Thomas JG, Marazita M, et al. *Use of Sixteen S-Liposomal RNA Gene Analysis to Characterize the Bacterial Signature Associated with Poor Oral Health in West Virginia*. *British Dental Journal*.
- Percival S, Thomas JG, and Williams DW. *Biofilms in Bacterial Imbalances in Chronic Wounds: Anti-Koch*. *International Wound Journal*, Blackwell Publishing.

2009

- Wilson A, Gray D, and Thomas J. Increases in Endotracheal Tube Resistance Are Unpredictable Relative to Duration of Intubation. *Chest*. Oct 2009;136(4):1006-13.
- Percival SL, Thomas JG. Transmission of *Helicobacter pylori* and the role of water and biofilms. *J Water Health*. Sept 2009;7(3):469-77.
- Thomas JG, Posey SB. Emergence of Oral/Dental Microbiology: The mouth is the most diverse and least understood reservoir of microbiology. *Advance for Administrators of the Laboratory*. June 2009;18(6):35-38.
- The Consequence of Microbial Biofilms: Collateral damage and “A Call to Arms.” *Advance for Administrators of the Laboratory*. In Press.

2008

- Thomas JG, Posey SB. Results Reporting in Microbiology Experts share views of the “seven deadly sins” of a microbiology lab report. *Advance for Administrators of the Laboratory*. Sept 2008;17(9):66.
- 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. Periodontol*. 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)

2007

- 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.

2006

- 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.

- **Monographs and Short Articles**

2010

- Thomas JG, Motlagh H. *Chronic Wounds and Biofilms: A Unique Alliance* (Part I, Part II, and Part III). Advanced Magazine for Administrators of the Laboratory. In Press
- Thomas JG. Microbiology Overview 2010: Open The Door for the 21st Century. *Advanced Magazine for Administrators of the Laboratory*. In Press
- Thomas JG, Posey SB, Orr B. Global Issues: Impact on Local Laboratories. *Advanced Magazine for Administrators of the Laboratory*. Apr 2010;22(7):10-12.
- Thomas JG, Ryan J, Posey S. *Pneumonia in the ICU: Managing Oral Pathogens for Prevention and Treatment*. Health Point Press.
- Thomas JG. *Sinusitis and Oral Infections. A Unique Link via Biofilm Organization*. Health Point Press.

- **Abstracts/Posters**

Presented in 2011

SYMPOSIUM ON ADVANCED WOUND CARE (SWAC). April 14-17, 2011.
Dallas, TX.

EUROPEAN WOUND MANAGEMENT ASSOCIATION. May 25-27, 2011.
Brussels, Belgium.

- SL Percival, JG Thomas. A Comparison of the Efficacy and Sustainability of Silver Containing Wound Dressings Evaluated with Flow Cytometry (FC).
- SL Percival, JG Thomas. Efficacy of Probiotic Strains *Lactobacillus casei* and *L. plantarum* in Altering an Infected Wound: Biofilm vs. Planktonic Phenotypes.
- JG Thomas, W Slone, S Litton, T Okel, L Corum, SL Percival. The Antimicrobial Efficacy of a Silver Alginate Dressing on Burn Wound Isolates.
- JG Thomas, W Slone, S Litton, T Okel, L Corum, SL Percival. The Antimicrobial Efficacy of Silver Dressings on Burn Isolates Grown within the Biofilm Phenotypic State.

51st INTERSCIENCE CONFERENCE ON ANTIMICROBIAL AGENTS AND CHEMOTHERAPY (ICAAC) Sept 17-20, 2011. Boston MA. Submitted.

- Waters C, Thomas JG. Designing and Implementing an *In Vitro* Airway Model to Simulate NICU Endotracheal Tube Colonization.
- Waters C, Thomas JG. Implementing the I-Vel Simulator to Evaluate NICU Airway Cross-Contamination.
- Thomas JG, Slone W, Waters C, Posey SB, Robinson JP. Integrating the Bardot (Bacterial Rapid Detection Using Optical Scatter Technology) Into the Clinical Microbiology and Bioterrorism Reality: Limitations and Advantages.
- Corum L, Waters C, Thomas JG. Use of an Optically Directed Endotracheal Tube Clearing Device to Reduce Biofilm-Associated Occlusion.

SYMPOSIUM ON ADVANCED WOUND CARE (SWAC). October 13-15, 2011.
Las Vegas, NV.

Presented in 2010

WVU/Regional

- West Virginia University School of Pharmacy, Pharmaceutical and Pharmacological Sciences, Health Science Center. Research Day, October 1st 2010.
 1. Posey SB, Motlagh H, Waters C, Bragg S, Thomas JG. Biofilm (Prokaryote) Communities Predicting Tumor (Eukaryote) Therapy.

2. Thomas JG, Bragg S, Waters C, and Posey SB. A Model and Strategy to Compare Antibiotics-Tumor and Anti-Biofilm Efficacy via Unique Biotyping Classification System.
3. Posey SB, Waters C, Bragg S, and Thomas JG. Effects of Anti-Cancer Drugs on Biofilms: Benign Prokaryotic Tumors.
- WV INBRE Poster Day, July 31, 2010.
Thomas R, Motlagh H, Thomas JG. Efficacy of Probiotic Strains *Lactobacillus Casei* and *L. Plantarum* in Altering an Infected Wound Biofilm Versus Planktonic Phenotypes.

National

- The Society of Acute Wound Care, Spring Meeting. Orlando, Florida. April 17-20, 2010.
 1. Thomas J, Motlagh H, Percival S. Are Wound Specimens Colonized With the Most Resistant Isolates and Associated With Antibiotic Pressures?
 2. Thomas J, Motlagh H, Percival S. Tracking MIC Distribution by Different Wound Specimens: Is There An Optimal Source to Measure Changes in Resistant Patterns?
 3. Thomas JG, Motlagh H, Percival S. Reducing Wound Colonization by “Replacement Therapy” (Probiotics) Using *Lactobacillus reuteri* in a TriPhasic Wound Model.
 4. Thomas JG, Motlagh H, and Percival S. Establishing “The Critical Ratio” as a Microbial Biomarker for Chronic Wound Classification and Status.
- **AMERICAN SOCIETY FOR MICROBIOLOGY ANNUAL MEETING** Los Angeles California. May 23-28, 2010.
 1. Thomas JG, Motlagh H, Percival S. Classifying MRSA Wound Isolates By MIC Distribution Integrating Geographic Site and Institution Type.
 2. Thomas JG, Motlagh H, Percival S. Creating and Instituting a Global MRSA Tracking Network.
- **SOCIETY OF ACUTE WOUND CARE (SAWC).** Fall Meeting 2010, San Diego California. September 23-25, 2010.
 1. Thomas JG, Motlagh H. Biofilms in Chronic Wounds Anti-Koch.
 2. Motlagh H. Percival S, Thomas JG. Confirming the Climax Ratio (CR) as a Microbial Biomarker for Wound Organism Classification and Therapy Selection.
 3. Motlagh H. Percival S, Thomas JG. Evaluation of a Probiotic Dressing Matrix to Inhibit Wound Pathogens, A Feasibility Study.
 4. Thomas JG, Corum L, Litton S, Okle T, and Sloan W. The Efficacy of Silver Alginate: Corrected Zone of Inhibition (C-ZOI) For One Hundred Clinical Isolates.
 5. Litton S, Corum L, Sloan W, Thomas JG, Brundage K. Use of Flow Cytometry (FC) in Vital Stains to Compare Antimicrobial Efficacy of Silver Containing Dressings Against *Staphylococcus aureus* and *Pseudomonas aeruginosa*.
 6. Authors: Thomas J, Linton S, Corum L, Brundage K, Percival S. Use of Flow Cytometry (FC) in Vital Stains to Compare Antimicrobial Efficacy of MAXORB™ Extra AG and AquaCel™ AG Dressings Against *Staphylococcus aureus* and *Pseudomonas aeruginosa*.

- **EASTERN ASSOCIATION FOR THE SURGERY OF TRAUMA (EAST) ANNUAL SCIENTIFIC ASSEMBLY**, January 25-29, 2011. Naples, Florida.
 1. Thomas J, Wilson A, Gray D. Advanced Endotracheal Tube Biofilm Stage, Not Duration, Of Intubation as Related to Pneumonia.

International:

- **ASM SPONSORED 5th INTERNATIONAL BIOFILM SYMPOSIUM** Cancun, Mexico. November 5-9, 2009.
 1. Thomas JG, Motlagh H. Integrating and Interpreting Biofilm Susceptibility Protocol For Clinical Microbiology.
 2. Thomas JG, Boas S, O'Malley L. Effects of Mechanical Ventilation and Aerosolized Tobramycin Within an Endotracheal Tube Biofilm.
 3. Thomas JG, Bragg S, Waters C, and Posey SB. A Model and Strategy to Compare Antibiotics-Tumor and Anti-Biofilm Efficacy via Unique Biotyping Classification System.
 4. Motlagh H, Hearn C, Thomas J. Unmasking the Benefit of a Probiotic *Lactobacillus reuteri* in a TriPhasic Biofilm Wound Model.
- **EUROPEAN WOUND MANAGEMENT ASSOCIATION (EWMA), ANNUAL MEETING**. Borne, Switzerland. May 2010.
 1. Thomas JG, Motlagh H, Percival S. Are Wound Specimens Colonized With More Resistant Isolates and Associated With Antibiotic Pressure?
 2. Thomas JG, Motlagh H, Percival S. Tracking MIC Distributions By Different Wound Specimens: Is There an Optimal Source to Measure Changes in Resistant Patterns?
- **UNIVERSITY OF MICHIGAN, ORAL MEETING**
 1. Usha S, Wen A, Zhang L, et al. Does Oral Bacterial Diversity Pre _____ Progression to Caries in Children? Results of a Pilot Study.
- **BIOFILMS 4 – INTERNATIONAL CONFERENCE**, September 1 thru 3, 2010, Winchester, England. University of South Hampton.
 1. Thomas JG, Posey SB, Motlagh H, Waters C. Biofilms (Prokaryote) Communities Predicting Tumor (Eukaryote) Therapy.
- **AMERICAN DENTAL EDUCATION ASSOCIATION (ADEA) 4TH ADEA INTERNATIONAL WOMEN'S LEADERSHIP CONFERENCE**, September 5 thru 8, 2010. Salvador Brazil.
 1. Motlagh H, Thomas JG, Crout R. A Unique Oral Microbial Signature for Women in Appalachia.
- **INTERNATIONAL ASSOCIATION FOR DENTAL RESEARCH (IADR), IADR/AADR/CADR 89TH GENERAL SESSION AND EXHIBITION**. March 16-19, 2011. San Diego, California.
 1. Motlagh H, Thomas JG, Crout R. The Effect of Oral Microbes on Biofilm Formation by Respiratory Pathogens.

2. Motlagh H, Thomas JG, Crout R. A Unique Oral Microbial Signature for Women in Appalachia: An Update.

Presented in 2009

IADR (International Association for Dental Research)

April 1-4, 2009. Miami, Florida.

- Kao EC, Jackfert L, Thomas JG, Ngan P, Gladwin M, Gunel E. Bacterial Adherence on Orthodontic Brackets and Titanium Miniscrew Implants.
- Gray DM, Thomas JG, Crout R, McNeil DW, Weyant RJ, Marazita M. Identifying Abiotic Consequences of Tooth Placement Utilizing Enzymatic Detection.
- Malic S, Thomas JG, Percival SL, Woods E. Characterizing Biofilm Architecture with Quantitative Imaging and 3-D Animation.
- Gadre DV, Olson B, Drake D, Weyant RJ, McNeil DW, Crout R, Thomas JG, Marazita M. Diversity of *Streptococcus mutans* Genotypes from Lower Socioeconomic Appalachian Families.

SAWC (The Symposium on Advanced Wound Care)

April 26-29, 2009. Dallas, Texas.

- Percival SL, Thomas JG, Cutting K. Biofilm Management in Woundcare.
- Thomas JG, Posey SB, Motlagh HM, Percival SL. Profiling the Impact of Chronic Wounds and Biofilms; Population Dynamics, Cost and Reimbursement
- Motlagh HM, Thomas JG. Engineering a Unique Triphasic Chronic Wound Model Employing Prokaryotic Community and Eukaryotic Cells (Sandwich Technique)
- Percival SL, Cutting K, Thomas JG, Cochrane C. Biofilms and gauzes: A concern?
- Percival SL, Thomas JG, Woods E. Biofilms, Microbial Imbalance and Synergy in Chronic Wound Infections: Anti-Pasteur.
- Thomas JG, Malic S, Percival SL, Woods E. Characterizing and Staging Chronic Wound Biofilm Architecture with Quantitative Imaging and 3-D Animation.

ASM (The American Society for Microbiology)

May 17-21, 2009. Philadelphia, Pennsylvania.

- Thomas JG, Posey SB, Campbell TA, Percival S. Effects of Anti-Cancer Drugs on Biofilms: Benign, Prokaryotic Tumors
- Thomas JG, Percival S. Designing, Implementing and Integrating a Biofilm Susceptibility Protocol

IAOO (International Association of Oral Oncology)

July 8-11, 2009. Toronto, Canada

- Thomas JG, Campbell TA, Williams D. Extrapolating Tumor Therapy to Manage Oral Biofilms Simultaneously: A Comparative Model System.

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

Invited Presentations/Workshops/Symposiums/Speaking Engagements

2011

- **WVU/Regional:**

1. Biofilms (Anti-Koch) in 3-D: A call to Arms for Dx and Rx of Unresponsive Infectious Diseases. BIOFILMS AND PATHOLOGY: I. The Milton S Hershey Medical Center. Jan 11, 2011.
2. Antibiotic Resistance: The Good, the Bad and the Ugly. APIC. May 12, 2011. Michigan.

- **International**

3. Oral Biofilms in 3-D: Preventing Unbalanced Microbial Consequences. Auckland, New Zealand. March 21, 2011.
4. Restorative Microbiology: The Benefits of a Balanced Oral Microbiota (Or Managing Periodontal Disease!). Auckland, New Zealand. March 21, 2011.
5. Unmasking the Consequences of an Unbalanced Oral Microbiota: Caries and Beyond. New Zealand Dental Association. Christchurch, New Zealand. March 22, 2011.
6. The Oral Microbiota Systemic Disease Connection: Linking Oral-Airway Consequences to Plaque Biofilm Staging. University of Otago. Dunedin, New Zealand. March 23, 2011.

7. Restorative Microbiology: Preventing an Unbalanced Oral Microbiota in Dental Disease (Particularly Caries). New Zealand Dental Association. Dunedin, New Zealand. March 23, 2011.
8. Preventing Oral Diseases: Restorative Microbiology and Plaque Biofilms. New Zealand Dental Association. Auckland, New Zealand. March 25, 2011.
9. Maximizing the Benefits of Oral Biofilms: Restorative Microbiology, Periodontal Disease and Probiotics. University of Melbourne, Co-operative Research Center. Melbourne, Australia. March 28, 2011.
10. Redefining the Microbiota, Its Significance and Management: A Powerful Tool in Total Health. Australia Dental Association/Dental Hygienists Association of Australia. Melbourne, Australia. March 28, 2011.
11. Understanding the Oral Microbiota, Its Components, and Its Benefits in 3-D. University of Adelaide. Adelaide, Australia. March 29, 2011.
12. The Power of a Balanced Oral Flora in Dental and Systemic Diseases: The Oral Microbial Signature. Australia Dental Association/Dental Hygienists Association of Australia. Adelaide, Australia. March 29, 2011.
13. New Frontiers in Oral Care: Probiotics, Oral Microbial Signature, Restorative Microbiology, and Beyond. Johnson & Johnson Pacific Advisory Board. Adelaide, Australia. March 30, 2011.
14. Restorative Microbiology: The Benefits of a Balanced Oral Flora. Australian Dental Association Congress. Adelaide, Australia. March 31, 2011.
15. New Frontiers in Plaque-Biofilm Management: Restorative Microbiology and Tailored Comprehensive Oral Care (T-COC). Australian Dental Association Congress. Brisbane, Australia. April 1, 2011.
16. Maintaining the Oral Microbiota: A Signature of Dental Health and Predicting Disease. Australian Dental Association Congress. Brisbane, Australia. April 2, 2011.

2010

- **WVU/Regional:**

1. Ohio – Biofilms from A to Z and What the Laboratory Does Not Know Can Be Catastrophic. 2010 Collaborative Laboratory Conference (CLC). Strongsville, Ohio. April 28-30.
2. WV – Biofilms and Disease Transmission: Perfect Partners. CAMC Health Education and Research Institute. APIC (Association for Practitioners of Infection Control). Charleston Civic Center, Charleston, West Virginia. October 1.
3. Department of Pathology, WVU – Health Science Center. Biofilms for Pathologist II, Unmasking the Link to Infectious Disease and Transmission. October 13, 2010. Pathology Grand-Rounds.
4. SAGE Strategy Meeting, Oral Care Assessment Using Non-Culture Techniques, Washington, DC. Satellite Symposium in Concert with National Nursing Meeting. Key note presentation. Oral Biofilms in the ICU: Linking Oral Care to Systemic Disease. May 23, 2010.
5. Symposium and Workshop, Center For Biofilm Engineering (CBE), Boseman, Montana. Key note presentation: Unmasking the Benefits of Probiotics *Lactobacillus reuteri* In a TriPhasic Biofilm Wound Model Simulator. July 3-4, 2010.

6. CA – APIC (Association for Practitioners of Infection Control), Coastline Chapter 95 Orange County, joint venture presentation. Key note presentation: Biofilms and Infections: Perfect Partners. Costa Mesa, California. August 10, 2010.
7. Keynote Speaker, Focused Diagnostics Laboratory, Orange California, August 11, 2010. Key note presentation: Bridging the Gap Between Biofilm Detection and Clinical Disease: What Should the Laboratory Do? Guest of: Ken Van Horn, PhD.
8. Oklahoma University School of Dentistry. Alumni Education Day. Oklahoma City, Oklahoma. September 17, 2010. Three Hour CME approved educational presentation. “Biofilms and the Impact on Dentistry: Head to Toe.”
9. 17th Annual EG Scott Microbiology Symposium. Cristiana Health Care. Cristiana, PA. Key note presentation: Biofilms in 3D and Linking Oral Health to Systemic Disease: What Can a Microbiologist Do?
10. The 40th Annual Symposium. Diagnostic and Clinical Challenges of the 21st Century Microbes. The Eastern Pennsylvania Branch of the American Society for Microbiology (ASM). November 17, 2010. Thomas Jefferson University.
11. Penn State University School of Medicine, Hershey PA. January 11, 2011. Key note presentation: Biofilm and Update with Clinical Emphasis.

- **International:**

1. Biofilms, Diseases, and Transmission: Anti-Koch. Czech Republic – BRNO Masaryk University, Department of Microbiology (Robert Kadlec). Microbiology Symposium 19th Conference of Young Microbiologists: TAMASEK Days 2010, Institute for Microbiology. June 3-4, 2010.
2. The New Frontiers of Biofilm Management: Restorative Microbiology in Tailored Comprehensive Oral Care (TOC). 18th International Symposium on Dental Hygiene Oral Health “New Concepts for the New Millennium, New Technology in Preventing and Treating Oral Diseases Including Alternative Treatments.” Scottish Exhibition and Conference Center. Glasgow, Scotland. July 1-3, 2010.
3. Biofilm Update: Linking Biofilms in Tumors and Therapy. Cardiff University School of Dental Medicine. Wound Engineering Group. Cardiff, Wales, UK.
4. Biofilms and Disease Transmission: The Perfect Partners. International Association for Dental Research (IADR), Satellite Symposium. “The Link to Systemic Disorders and Solutions to Clinical Practice, New Scientific Trends on Oral Biofilms and Bacteremia Research.” Barcelona, Spain.

2009

The focus of the speaking topics and locations was used to highlight the evolving theme of our BRL: “International Microbiological/Global Educator.” This was highlighted by:

1. Asia Pacific Tour, IV, a 30,000 mile unique educational experience in China (Wuhan) and Manila, Philippines. It was unique by my presence during a “Katrina-Like” Typhoon, which cost 200 lives and 270,000 homeless
2. The request to develop and implement the first ever Biofilm Symposium for the Asia-Pacific region, scheduled for September 12-14, 2010. This will be coordinated by Professor Hui Chen, School of Medicine, Zhejiang University.

Invited Presentations (National and International)

Jan 8 Morgantown, WV
Rotary International “We Live in a Microbial World”

23 Roanoke, VA
Regional Dental Association, Virginia Dental Association
Full Day Seminar
“Biofilms and Oral Diseases; Management and New Options”

29 Seattle, WA
Introduction of Sunstar G.U.M. PerioBalance,
“A Unique Oral Probiotic: What is a Probiotic?”

Feb 3 Morgantown, WV
15th Annual Dental Research Day
“A Call to Arms: Establishing the Oral Flora as the Key Element
in VAP”

10-12 Norwich University, JT’s Alma Mater: Three lectures:
Global
1. “Consequences of a Microbial Ecologic Imbalance: A
Infectious Disease Tsunami?”
Antibiotics”
2. “Therapeutic Microbiology: Good Bugs vs. Bad
3. “Global Infectious Diseases: We live in a microbial
world.”

16 Dartmouth College, NH
Department of Microbiology, School of Medicine
“Biofilm and Respiratory Diseases: The Connection.”

March 3 Pittsburgh, PA
Alleghany-Singer Research Institute, Center for Genomic
Sciences
“Biofilm Scandal in the Mechanically Ventilated Patient”

10 Bethesda, MD
3rd FDA Presentation
“Silver Coated Endotracheal Tube:510k Application for
Covidien”

May 18 Philadelphia, PA
- American Society of Microbiology (ASM)
“Ask the Expert” Presentation – BioMeriux Sponsored
- ASM Focus Groups: “New Alternative Methods for Molecular
Testing”

July 16 Chicago, Illinois
Sage Products, Inc.
2 Presentations: “Biofilms 101” and “Chronic Wounds and
Biofilms”

September

- 20-22 Wuhan, China (International)
IADR/PAPF/APR
2nd Meeting of IADR PAPF/1st Meeting of APR
Key Note Speaker “Oral Biofilms: Linking the Systemic Diseases”
Wuhan, China
Plan 1st Annual Asia-Pacific Global Biofilm Symposium (2010)
- 25-28 Manila, Philippines
Philippine Association of Dental Colleges
“Changing Paradigms in Oral Microbiology: It’s Growing Significance in Systemic Diseases”
- 22-27 Pasay City, Philippines
101st Annual Convention of the Philippine Dental Association
“Changing Paradigms in Oral Microbiology: It’s Growing Significance in Systemic Diseases”
- 24-25 Wheeling, WV
20th Annual John G. Thomas WV Microbiology Symposium

October

- 20-21 Philadelphia (Mendenhall), PA
16th Annual E.G. Scott Symposium
“Biofilms in 3-D and Linking Oral Health to Systemic Diseases: What Can a Microbiologist Do?”
- 29- Nov 2 Palm Springs, CA
American Institute of Oral Microbiology. Update of Biofilms Using 3-D Imaging:
1. “The Oral Microbial World in 3-D”
2. “Probiotics and Replacement Therapy: Y/N?”

Presentations 2008 and 2007

- 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.
- Dentsply Endodontics Seminar. Keynote Speaker. Connecting the Dots: Linking Disparate Facts. Steamboat, CO. February 1, 2007.

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

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

2010

Teaching students was still the highlighted priority of our “student driven biofilm research laboratory.” We continued education of West Virginia Undergraduate Students (WV-INBRE) graduate and post-graduates (professional students) with an emphasis on post-professional studies for the School of Dentistry, Endodontics, Orthodontics, and WVUH Medical Students in a pathology rotation.

We continue to catalyze the shared interest of third year dental students of WVU and fourth year Cardiff University School of Dental Medicine uncovering significant similarities/dissimilarities of dental education in the US and UK. An exchange program of those original UK dental students is to occur December 2010.

Most important was the dramatic expanded use of our e-web education via my website at WVU, nationally and internationally. The most frequently used material included:

- Cases
- Biofilms Made Easy
- Mini-Micro Educational Resources

Rutgers University (UMDNJ) integrated their course material for Laboratory Medicine for Graduate Students with our material as a requirement.

- **Teaching Courses/WVU**
Contact HRS 50hrs.
 1. Microbiology and Immunology for Dental Students (Course 702 - 7 lectures and 2 laboratories).
 2. Microbiology for Post-Graduate Education (Dental, Course 793).
Course Director, 4 credit hours (25 lectures and 6 laboratories)
Integrated National and International Faculty from, respectively, Cardiff University School of Dental Medicine and Loma Linda University Dental School, Loma Linda California.
 3. Pathology, (Course 751, Medicine) 2nd Year Medical Students (1 lecture)
 4. Medical Technology (Course 450, Microbiology and Virology) (3 lectures).
 5. Periodontics 711, Periotherapy (1st Year Dental Students, 4 hours).
- **Teaching/Courses/ Rutgers University (UMDNJ)**
 1. Guest lecturer – On line learning: Academic Course Participation.

(2 Lectures, Question and Answers, 4 hours)

(UMDNJ linked to our website and course content involves our 30 minute mini-micro educational series and the Biofilm Textbook 101 or Biofilms Made Easy)

- **Teaching/Courses/Cardiff University School of Dental Medicine, Cardiff University/Cardiff UK.**
 1. 2nd year dental students (3 lectures – a continuation of sabbatical teaching occurs on Webnet.
- **Preceptorship/Mentoring/Medical.**

Contact HRS – 3 months

 1. Michael Hayes, 4th year medical student.
4th year medical student in pathology rotation, one month in biofilms. Poster and abstract: “Clinical Applications of Non-Antibacterial Tetracyclines: Potential Use as Anti-Tumor Drugs.”
- Jodie Posey, MD. 3rd Year OB/GYN. “Presence of Biofilms in Abnormal Pregnancy” Co-PI’s, Dr. Thomas and Dr. Natz, Dept of Microbiology and Immunology.
- Dr. Ussea Philips, MD., Pediatric Infectious Diseases and Cystic Fibrosis.
- Very interested in biofilms with cystic fibrosis and detection/tracking of unique isolates utilizing MADI-TOF as non-culture techniques, also very interested in data collection, description of NICU endotrachs for STTR Grant Entitled: “Development of Novel Antimicrobial Neonatal Tubes, Tracheostomy Tubes (Disposable Inner Cannulas), and Closed Suction Catheters to Prevent Bacterial Adhesion and Biofilm Formation to Reduce the Risk of Infection and Improve Device Functionality.” (NIH Grand Submission: RFA-HD-10-013 (Safe and Effective Instruments and Devices for Use in the Neonatal Intensive Care Units – STTR-R41).
- **Preceptorship/Mentoring/Dental**

Contact HRS 100hrs

 1. **Dental Hygiene**
 1. Amy Namsupak. Title of Masters: ??
 2. Whitney Fulaytar. “Microorganisms on Mouth Guards: A Study of a High School Football Teams’ Mouth Guards Over a Regular Season.”
 3. Devon Patel and Robby Parker. “The Influence of Household Environmental Pressures on Toothbrush Colonization.”
 2. **Table Clinic Research, 3rd Year Dental Students 2010**
 1. Jason Hutchens, Matt Hiemar, Chad Bush, John Zimmerman. “The establishment of a Baseline of Oral Hygiene Effectiveness in Nursing Homes Across West Virginia to Optimize Future Oral Care in This Population.”
 2. Josh Abott and Lora Ellars. “Surveying Oral Care in Prevalence of Pneumonia in West Virginia Nursing Home Residents: Is There a Correlation?”
 3. Madigan Burgess and Joe Dagner. “Inhibitory Effect of Cranberry on Biofilm Formation and the Adherence of Periopathogenic Bacteria.”

4. Dawn Glover and Emily Demitroff. “Fingerprinting Adherent Oral Secretions and The Impact on Airway Resistance of Mechanically Ventilated Infants in The NICU: Are Oral Microbes Significant?”

5. Jennifer Nehogd and Monika Green. “Developing, Designing, and Evaluating an Oral Health Preceptorship/Rotation for Dental Students in the ICU Focusing on Mechanical Ventilation.”

6. Jason Ellis. “Evaluating the Impact of MTAD as an Endodontic Irrigant Versus Chlorahexadine and EDTA Using a Tooth Model.”

2009

1. Eric Eschard, Ashley Smith, and Zachary Mace, “Mixing Bowls as Reservoirs for Infectious Organisms and Potential Disinfection.”

- **Dental Post-Doctoral (Masters Level) –**

Contact HRS 100

1. Lauren Namsupak, DDS, “Automated Image Analysis Comparing EDTA in Malic acid in Smear Layer Removal From Instrumented Nerve Root Canals.”

2. Spencer R. Stiles, DDS, “Was the Effect on the Antimicrobial Properties of Hoshino’s Triple Antibiotic Paste When Chlorexidine Gluconate (0.12%) is Substituted for the Propylene Glycol and Macrogol Ointment Mixture.”

- **School of Pharmacy, Pharmacologic and Pharmaceuticals.**

3. Scott Bragg (Carla J. Csee, MA, Director).

“Eukaryotic Tumors That Mimic Prokaryotic Biofilms, Tumor Lytic Bacteria and Treatment of Biofilms (Proof of Concept).”

Major contributor for investigator initiated studies with Merck and our involvement with the cancer center.

- **West Virginia Undergraduate Students (WV-INBRE).**

Contact HRS 3 month rotation.

4. Richard P. Thomas,

5. “Efficacy of Probiotic Strains *Lactobacillus Caci* and *Lactobacillus plantarum* in Altering an Infected Oral Wound: Biofilm versus Planktonic Phenotypes.”

- **Faculty Visitations**

1. Shahrokh Shabahang, DDS, PhD., Loma Linda University, California. Biofilms, Tumors, and New Research – 3 day visit.

2. Jay Paul Robinson, PhD. Director of Cytomics Purdue University. Co-PI for NIH Grant Entitled, “A Distributed Clinical and Biodefense National Network for Rapid Organism Identification.”- 4 day visit. Including Primary Speaker for Milton Hale Presentation.

3. James Snider, PhD. Director of Clinical Microbiology, University of Louisville Hospital, Kentucky; one week rotation of students in Biofilms and Wounds, Study Project Entitled, "Developing a Wound Model Using Our TriPhasic Plus as a Template."

4. Brian Cuevas, PhD., Kimberly Clark HealthCare Concept and Technology Development, and 3 Staff Members, Atlanta, Georgia. "Biofilm Mini-Boot Camp Three", December 9-12, 2010.

5. Joyce Ryan, RN, MS, SAGE International, Chicago, Ill. Critical Care Clinician: (Monthly visits)

- Developing an ICU Protocol and IRB Preparation.
- Developing a Multi-Center Study Assessing Oral Care in the ICU on Mechanically Ventilated Patients.

Submitted \$240,000 Grant for two hospitals which is on hold pending completion of Pilot Study, \$15,000.

2009

Teaching students was still the highlighted priority of our "student driven biofilm research laboratory." We continued education of 3 undergraduate students (WV-INBRE), 2 graduates and 3 post graduates (professional students) with an emphasis on post-professional studies for the School of Dentistry (Endodontics and Orthodontics), and WVUH Residents in Surgery and Infectious Diseases.

Highlight, however for 2009 was the integration for 3rd year dental students of WVU and Cardiff University. We catalyzed several studies of shared interest, uncovering significant similarities/dissimilarities of dental education in the USA and UK. An exchange is pending.

1. Teaching/Courses/WVU

Contact HRS 50hrs

- Micro-Immuno (Dental) 702 (9 lectures)
- 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) (1 lecture)
- Medical Technology 402 (3 lectures)

2. Mentoring

A. Dental (3rd Year Dental Student Research)

Contact HRS 100hrs

2009

School of Dentistry

- Cassis D, Little E. “A Comparative Analysis of Endodontic Disinfecting Techniques”
- Haun T, Casto C, Gamble J. WVU SoD & Cardiff University School of Dental Medicine: “A Comparison of Dental Practice & Education.”
- Lindsley HM. “The Effects of Microgravity on *Streptococcus mutans*.”
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

2009

- Chris Hearn: “Unmasking the Benefit of a Probiotic, *Lactobacillus reuteri*, in a Triphasic Biofilm Wound Model.” WV-INBRE Student
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

2009

- Geoffrey Cunningham, DDS “Evaluation of Probiotics and Eucaryotic Cells on Treated HA Disks.”
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

2009

- Lauren O’Malley (2nd Year Medical Student)

- a. COHRA – “Data evaluation for OMS (Oral Microbial Signature) and Clinical Outcomes”
- b. Antibiotic Resistance, VAP – “Tracking MRSA in LRI, VAP, ICU”
 - Jodi Posey, MD (2nd year OB Resident) “Biofilms in PrOM: Is there a Link?”
 - Clair Bienach, MD (3rd year Orthopedics Resident), “Recovering Biofilms on Weight Bearing Structures”

E. Pharmacy (1 month rotation)

2009

- Scott Bragg (Carla J. See, MA, Director)
Eucaryotic Tumors Mimic Procaryotic Biofilms
“Tumor-Lytic Bacteria and Treatment of Biofilms (Proof of Concept)”

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

We have always integrated clinical research (Bench) with patient management (Bed) and translated our studies into diagnostic microbiology. This year was our most successful, highlighting diversity and newer applications as described below:

1. Anti-tumor/anti-biofilm testing using a unique poloxamer model
2. Integrating and interpreting a biofilm susceptibility protocol for clinical microbiology
3. Establishing clinical significance of “Critical Colonization,” a ratio of biofilm MBEC: Planktonic MIC.
4. Expanded and transition from silver coated endotrachs to silver coated dressings with emphasis on biofilms in chronic wounds and burn patients, following studies at Cardiff University during sabbatical. Expanded from ConvaTec to AMS (Advanced Medical Solutions) for Enhanced silver relief using a new matrix material for dressings. Advanced studies by integrating with the 2-dimensional corrected-zone of inhibition (C-ZOI) into pH and poloxamer stress with antimicrobial activity assayed by flow cytometry, a first for wound studies involving silver matrix. Collected samples from WV (WVUH and Huntington-Cabell), Cincinnati, and Globally, South Africa, National Laboratory. In 2011, will integrate specimens from Australia and New Zealand.
5. Incorporating state of the art non-culture techniques for both routine detection, work-flow assessment, and establishing new patterns of detection for biofilm isolates, wound isolates, and cystic fibrosis.
 - MALDI-TOF (Matrix Assisted Laser Desorption Ionization – Time of Flight).
 - BARDOT (Bacterial Rapid Detection Using Optical Scattering Technology).
6. Developed and implemented the Triphasic Plus Wound Model Simulator allowing for assessment of therapeutic interactions (Probiotics) as well as significance of mixed species on targeted eukaryotic cells. (www.hsc.wvu.edu/som/pathology/thomas/transelational research/wound model).
7. Investigated use of bioluminescent biofilm markers with _____ imaging using the IVIS System and integrated studies with cancer and veterinary medicine.

1. Committees

A. International

- International Dental Exhibition and Meeting (IDEM) Advisor for Asia-Pacific Committee on Antiseptic Oral Mouthrinses (Supported by J&J)

B. National

- Member, Scientific Advisory Board, American Dental Association (ADA). 2008-2009, 2009-2010.

C. WVUH

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

D. WVU School of Dentistry

- Research Committee

2. WVUH Microbiology Laboratory

A. Hospital Focus

- Developed and integrated methods for Biofilm MBEC (Minimal Biofilm Elimination Concentration) for: Systemic (BSI), Urinary, Pulmonary, Dental, and Fungal Diseases.
- 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, 2009, 2010 using TSN
Microbiology consultant for the WVUH Pharmacy Antimicrobial Rotation: ICU/BMTU
- MERCK STAR Program: Strategies for Reducing Antimicrobial Resistance

B. New Laboratory Tools

Updated and expanded considerably the “Clinical Tools” website (www.hsc.wvu.edu/som/pathology/thomas/clinicaltools). Added procedures and methods focused on clinical laboratory and biofilms. Particular emphasis was placed on the importance of “Ratio”, Biofilm to Planktonic Phenotypes using Congo Red (CR) Medium.

- Poloxamer Biofilm Resistance
- *In vitro* – *in vivo* Chronic Wound Model
- 6 University Consortium to study Resistance and Biofilm known as “The International University Biofilm Research Consortium.”

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

2010 heralded major shifts in strategy with emphasis on diversity via education, infant VAP (NICU), chronic wounds, and integration with cancer units of WVUH and WVU-HSC. Also, major emphasis on “*in vitro-in vivo* switch,” with the latter emphasizing bioluminescent bacteria that produce biofilms (Caliper/IVIS) and use of real-time photonic imaging to assess migration of organisms in mouse/ferret models from biofilms on IMD’s (Catheters/ETT’s).

1. We continued unmasking biofilms of importance in IMDs (Indwelling Medical Devices) with expansion from Adult-Ventilator-Endotrach-Lung (VEL) “Simulator” into new infant simulation in NICU (Ceragenix) with inoculation of OX 174, an H1N1-like virus in size and airway contamination.
2. The expansion of biofilms with “probiotics” and the use of a Triphasic wound model, incorporating a patient-applied-for use of a unique strain of *Lactobacillus reuteri* (Biologics)
3. In both the 1) Adult and Infant VEL Simulators and 2) the chronic Triphasic Wound Model, the development of an organism system/tool to measure development of antibiotics resistance during biofilm growth. This utilized internationally acquired resistant organisms using our Tri University Consortium.
4. The role of a new hypothesis, that tumors are really eucaryotic biofilms, and selection of anti-biofilm therapy could be predicated on anti-tumor therapy, using a new poloxamer-model which stressed collaboration with the WVU-HSC Cancer Center; it could also assist in high through-put, inexpensive evaluations aimed simultaneously at anti-tumor, anti-biofilms in high risk oncology patients.
5. Integration with WVUH Dept. of Surgery (Dr. Alison Wilson) and the new WVU Translational Research Center, several biofilm studies including:
 - a) SAGE (Oral-systemic link) and the inclusion in ICU’s Protocol Improvement for Comprehensive Oral Care to reduce VAP
 - b) Application for a DOD/NIH grant to study the significance of ETT Biofilm Staging and the consequence of the oral-ETT-Lung cascade in military patients suffering from trauma associated pneumonia.

FEDERALLY FUNDED (NIH, USA).

AWARDED

1. NIH Prime Award #2 - RO1 DEO 14899 – 08. “Factors Contributing to Oral Health Disparity in Appalachia.” Principal investigator Dr. Richard Crout, School of Dentistry with Sub-Award to John Thomas as Co-PI. 5 year grant following first award from Dr. Mary Marazita, and Oral Health Disparities in Appalachia. Total Amount \$631,000. 2011-2016
2. NIH Grant to Purdue University (Dr. Paul Robinson, PI) with sub-award to Dr. John Thomas as Co-PI, “A Distributed Clinical and Bio-Defense National Network for Rapid Organism Identification. Use of BARDOT for Rapid Detection of Bio-Terrorism Pathogens in Stools. Total Grant Award, \$1.35 million/1 year. OSP 10-219. August 19 through June 31, 2011.

SUBMITTED

1. RFA# A1-10-017. RR1. Partnerships for the Next Generation Bio-Defense Diagnostics. 5 years, July 2, 2011 – June 30, 2016. Dr. Paul Robinson (PI, Purdue University and John

- G. Thomas, PhD, Co-PI. “Use of BARDOT: Rapid Label-free Identification of Pathogens by Laser Light Scatter.”
2. (NIH Grant Submission: RFA-HD-10-013). “Safe and Effective Instruments and Devices for Use in the Neonatal Intensive Care Units” (STTR-R-41). John G. Thomas, PhD, PI, Development of Novel Antimicrobial Neonatal Tubes, Tracheostomy Tubes (Disposable Inner Cannulas) and Closed Suction Catheters to Prevent Bacterial Adhesion in Biofilm Formation to Reduce the Risk of Infection and Improve Device Functionality. Multi-investigational study evaluating antimicrobial peptide bonded to neonatal endotrachs and device material utilizing our I-VEL (Infant-Ventilator Endotrach Lung Model) and integration of IVIS with bioluminescent bacteria as transition from *in vitro* to *in vivo* studies.
 3. SBIR/STTR PHS. National Institute of Dental and Craniofacial Research (NIDCR Infectious Diseases and Immunity). “Develop Ways to Interfere with Microbial Colonization and Growth Through the Use of Antimicrobial Agents in Chemotherapy”. John G. Thomas, PhD, PI. “Use of the Infant VEL Model to Assess Maintenance of Endotrachs via Functionality and Work of Breathing.”

BioScience/Industry/US

- 1. Thrasher Research Fund, Paul B Savage, Department of Chemistry and Bio-Chemistry, Brigham Young University, PI. “Novel Neonatal and Pediatric Endotracheal Tubes Designed to Significantly Reduce the Risk of Morbidity and Mortality From Biofilm Related Ventilator Associated Pneumonia in the NICU and PICU. Co-PI John G. Thomas, PhD. Study will transition from detection of microbes in extubated endotrachs to use of those isolates in the IVEL Model Simulator with ultimate studies involving bioluminescent markers in mice with the IVIS tracking system.
- 1. Investigated initiated study, Merck supported. John G. Thomas, PhD, Primary Investigator (PI). “Improving Outcomes” Co-treatment of Catheter Associated *Candida albicans* Biofilms in Oncology Patients Unmasking Synergy of Anti-Fungal/Anti-Biofilm/Anti-Tumor Therapy. This study utilizes information from ongoing studies since Cardiff University, Cardiff Wales, that initiated our thoughts that a biofilm is procaryotic tumor or more recently that a tumor is a eucaryotic biofilm, www.hsc.wvu.edu/som/pathology/thomas/clinical tools/biofilm/and tumor studies. Our modeling system utilizes a poloxamer to replicate biofilms, but tests in a simple method with a high throughput, evaluating antibiotics, anti-tumor drugs and anti-fungals simultaneously and with synergy potential.
- **INTERNATIONAL**
AWARDED
 1. John G. Thomas, PhD, PI, The Efficacy of Silver Alginate, Advanced Medical Solutions, Limited, AMS, Cheshire England, Steven Percival, Director of Research.
 - A year-long study to evaluate a new matrix for silver release in dressings of chronic wounds subset into four deliverables with four specific goals.
 - *Clinical isolates from within WVUH, Influence of pH and phenotype
 - *Significance of ICU isolates

*Impact of burn units and global distribution of isolates focusing on MRSA and *Staphylococcus aureus*

*Impact of anaerobic isolates. \$63,000 – June 11-July 16, 2011.

Note: Necessitated the acquisition of a CBD permit to import and transfer etiologic agents or vectors of human disease from the globe issued August 9, 2010, for one year.

Also included in the globalization of our research and specimen receipt, the commitment of the National Health Laboratory Service Houghton South Africa and Dr. Andriano G Duse.

SUBMITTED

1. Hong Kong, China, Oral BioSciences, RFCID/HHSRF (Research Fund for the Control of Infectious Diseases Health and Health Service Research Fund). PI, Dr. C. J. Seneviraine, Faculty of Dentistry, Oral BioSciences, Hong Kong University and Prince Philip Dental School.

“Antifungal Susceptibility and Virulent Attributes of Candida Blood Stream Isolates: A Cross Country Study. Co PI, John G. Thomas, PhD.

2. Cardiff University, University Hospital of Wales, Dr. Matt Wise, PI, Oral Flora and Contribution to Ventilator Associated Pneumonia: Comparative Interventions Using Sponge and Brush, Is There a Difference? Co-PI John G. Thomas, PhD. 3 year study, split-mouth design. A follow up to work established during sabbatical in 2007.

• CONSULTATION/COLLABORATION

1. EndoClear.
2. Kimberly Clark.
3. Phillips.
4. SAGE.
5. Ceragenix
6. Covidien-Tyco
7. Convatec

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

2010

Continued to expand the development of our web based learning and the use of the website with educational resources and microbiology tools. Use these resources from our website at International Meetings to Educate and encourage investigators, scientists, and participants at meetings to utilize the website as a continual update for research and for education, and for clinical application. The number of Google hits on our web-based educational components has doubled since we started tracking them several years ago.

1. Most effort was put into the web based educational resources and clinical tool websites with direct access and more defined capabilities, most used resources were, The Biofilms Made Easy, a Pictorial Tutorial on Biofilms, and the 30 Minute Micro-Mini Series on topics that were expanded to include three new ones.

2. To help educators “make a world of difference” Expanded the online use of the 19th, 20th, and 21st Microbiology Symposiums with PowerPoint Presentations via WVU E-Commerce. Audio for each Speaker continues to be an interest, but need to expand this very useful tool. Internationally it has significant potential, need to find the proper avenues.
3. Expanded my academic position at Rutgers University and became a Guest Lecturer in the CLSC 624 Infectious Disease Three-Credit Graduate Course at UMDNJ. UMDNJ has made parts of our website requirements for their continuing global education mission.
4. Expanded significantly the clinical tools aspect of our websites with emphasis on laboratory methodologies for biofilms and antimicrobial results and tumor biofilm studies with a complete discussion and PowerPoint supported emphasis of our theme and hypothesis that a biofilm is a procaryotic tumor or vise versa.

Highlights included:

Dr. Milton R Hales’ lecture in pathology. Presentation June 11, 2010.

Dr. Paul Robinson, from Purdue University, in conjunction Dr. Robinson gave lectures to the residents and to the staff focusing on rapid detection of microbes using imaging and scatter technology with highlights of his Mt. Everest Expedition and successful summiting. “No utilization of diagnostic cytometry, pulmonary problems at 29,000 feet.”

The 21st Annual John G Thomas, PhD, West Virginia Microbiology Fall Symposium was a success and held at Oglebay Park, September 23 and 24, 2010. Five speakers gave traditional lectures on Friday, but highlighted the new bugs with desert on Thursday night and case presentations during Friday.

Guest lecturer for UMDNJ School of Health and Related Professions, Department of Clinical Laboratory Sciences and involved with reciprocal education of CLSC6274 infectious diseases 3-credit graduate course. Involved lectures Q and A and electronic interface with graduate students.

2009

Our growing interest and energy levels in international education reflected our global travels and the recognition that there is an international void in translational research and clinical microbiology. Hence we expanded both our national and international presence, highlighting the use of the internet and distant-learning.

1. We added to our popular Mini-Micro Educational Series, two new topics: Chronic Wounds and Probiotics
2. We made available via video and audio the 19/20th John G. Thomas Clinical Microbiology Symposium, particularly in Asia-Pacific
3. We developed, major global educational grant with the help of Dr. Shelia Price, Dean for Education, SoD, WVU, and Hamed Motlagh, MPH, entitled “Creating a Step-Wise Global Pre-Dental Classroom for the Disadvantaged” and submitted to Robert Woods Johnson (2) Foundation.
4. Utilized for the first time, internet education, and broadcast live from the Philippines our part of the 20th JGT Microbiology Symposium, supported in large part by J + J (Listerine)

5. We've been asked to organize and implement the first ever Asia-Pacific Biofilm Symposium to be held in Wuhan China, SoD, Dr. Chen Professor, Zhejiang University School of Medicine, September 12-14.

2009

National

- 20th Annual 2-Day John G. Thomas, PhD West Virginia Microbiology Symposium
West Virginia University, Department of Pathology (D)
Oglebay Park, Wheeling, WV – September 24-25, 2009
 - 5 speakers
 - Simultaneous Audio/Video integration with 101st Philippine Dental Association (PDA), Manila, and 1st International Association for Dental Research (IADR), Asia Pacific Division, Wuhan, China via webcam. (Supported by Johnson & Johnson International)
Created new online availability of both the 19th and 20th John G. Thomas West Virginia Fall Microbiology Symposium (B)
Complete Lecture PowerPoints with video and audio, Titled Clinical Microbiology Symposium, integrated with WVU E-Commerce and HSC SOLE.
- Organized Dr. Milton R. Hales 2-Day Lectureship in Pathology
Zubair Boloch, MD, PhD. University of Pennsylvania “Thyroid Pathology, Thyroid Cytopathology” Dec. 10-11, 2009. WVU HSC, Morgantown, WV

International

- John G. Thomas, PhD, Hamed Motlagh, BS, Sheila Price, DDS, PhD.
“Creating a Step-Wise Global Pre-dental Class Room for the Disadvantaged”
Robert Wood Johnson Foundation Grant Application (C)
- Organize and Coordinate, First Asia Pacific, Global Biofilm Symposium,
Wuhan, China Co-Directed by Dr. Hui Chen, Professor, School of Medicine, Zhejiang University and Dr. Steven Percival, Advanced Medical Solutions, Manchester, England, UK.
- The Biofilm Buzz, 3rd Edition. International Newsletter from the Biofilm Research Laboratory, A Student/Resident focused Research Laboratory.

2008/2007

- 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

- The Abstract Selection Committee of the 2nd Annual Fall Symposium on Advanced Wound Care, please to present the 2010 SAWC BALL, first place laboratory research abstract

- award to John G. Thomas, PhD., Hamed Motlagh, and Steven L. Percival for the Abstract Creating and Instituting the Global MRSA Tracking Network – September 23 through 25, 2010, Anaheim California.
- Reappointed to the Scientific Advisory Counsel to the American Dental Association (ADA), Chicago, Illinois, 2009 to 2010. Considerable effort spent on redefining methods for testing and comparing anti-effectives used in irrigants for root canals and Endodontics, combined protocols with the University of Iowa and Dr. David Farr.
 - The Student Research Development Award from the WVU School of Dentistry. Oct. 15, 2009. (3rd time receiving award: 1998, 2006, and 2009)
 - Patent Applications
 1. I-VEL: Infant-Ventilator Endotrach Lung Simulator “A Respiratory Simulator for MV Patients in NICU to Study Microbial Colonization.”
 2. Chronic Wound and Biofilm Model: A Triphasic Matrix “A Eucaryotic/Procaryotic Matrix to Simulate Wound Infections and Impact of Biofilms.”
 3. “Eucaryotic Tumors are Really Procaryotic Biofilms: Linking Tumor Therapy to Anti-Biofilm Activity using a Poloxamer Model.”
 - Certificates/Awards of “Profound Appreciation/Awards for recognizing the selfless support and extensive knowledge of Professor John G Thomas.”
 1. 1st Secretary, China National Society, Wuhan, China IADR, Asia-Pacific Branch, September 22, 2009
 2. General Chair, 101st Annual PDA (Philippine Dental Association) Convention, SMX Convention Center, Pasay City, September 23, 2009.
 3. President, Philippine Association of Dental Colleges, Manila, September 26, 2009.
 - **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 day, 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 too.

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. An 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.