



Samuel Yang, MD, FACEP

Associate Professor of Emergency Medicine

 Curriculum Vitae available Online

CLINICAL OFFICES

- **Stanford Emergency Medicine Dept**

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Bio

CLINICAL FOCUS

- Emergency Medicine
- Infectious Diseases
- Immunology
- Biomedical Engineering
- Systems Biology
- Machine Learning

ACADEMIC APPOINTMENTS

- Associate Professor - University Medical Line, Emergency Medicine
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Grant Reviewer, NIH, DoD-CDMRP, MRC-UK, Wellcome Trust (2011 - present)

PROFESSIONAL EDUCATION

- Board Certification: Emergency Medicine, American Board of Emergency Medicine (2007)
- Fellowship: Johns Hopkins University School of Medicine (2004) MD
- Residency: Johns Hopkins University School of Medicine (2002) MD
- Medical Education: University of California, Los Angeles (1999) CA
- Undergraduate, Massachusetts Institute of Technology , B.S. (1994)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Dr. Yang's research is focused on bridging the translational gap at the interface of molecular biology, genome science, engineering, and acute care medicine. The investigative interest of the Yang lab falls within the general theme of developing integrative systems-level approaches for precision diagnostics, as well as data driven knowledge discoveries, to improve the health outcome and our understanding of complex critical illnesses. Using sepsis and COVID-19 as the disease models with complex host-pathogen dynamics, the goals of the Yang lab are divided into 2 areas:

- 1) Developing high-content, near-patient, diagnostic system for rapid broad pathogen detection and characterization.
- 2) Integrating multi-omics molecular and phenotypic data layers with novel computational approaches into advanced diagnostics and predictive analytics for acute infections.

CLINICAL TRIALS

- SEP-SEQ Trial - Determining the Etiology of Sepsis Using an Infectious Disease Diagnostic Sequencing Assay, Not Recruiting

Teaching

STANFORD ADVISEES

Med Scholar Project Advisor

Elizabeth Zudock

Postdoctoral Faculty Sponsor

Ryuichiro Abe, Katherine Lebold, Satoe Ogawa

Publications

PUBLICATIONS

- **Re-visiting humoral constitutive antibacterial heterogeneity in bloodstream infections.** *The Lancet. Infectious diseases*
Abe, R., Ram-Mohan, N., Yang, S.
2023
- **SARS-CoV-2 RNAemia predicts clinical deterioration and extrapulmonary complications from COVID-19.** *Clinical infectious diseases : an official publication of the Infectious Diseases Society of America*
Ram-Mohan, N. n., Kim, D. n., Zudock, E. J., Hashemi, M. M., Tjandra, K. C., Rogers, A. J., Blish, C. A., Nadeau, K. C., Newberry, J. A., Quinn, J. V., O'Hara, R. n., Ashley, E. n., Nguyen, et al
2021
- **Profiling chromatin accessibility responses in human neutrophils with sensitive pathogen detection.** *Life science alliance*
Ram-Mohan, N., Thair, S. A., Litzemberger, U. M., Cogill, S., Andini, N., Yang, X., Chang, H. Y., Yang, S.
2021; 4 (8)
- **Analytical and clinical validation of a microbial cell-free DNA sequencing test for infectious disease.** *Nature microbiology*
Blauwkamp, T. A., Thair, S., Rosen, M. J., Blair, L., Lindner, M. S., Vilfan, I. D., Kawli, T., Christians, F. C., Venkatasubrahmanyam, S., Wall, G. D., Cheung, A., Rogers, Z. N., Meshulam-Simon, et al
2019
- **A "Culture" Shift: Broad Bacterial Detection, Identification, and Antimicrobial Susceptibility Testing Directly from Whole Blood.** *Clinical chemistry*
Andini, N., Hu, A., Zhou, L., Cogill, S., Wang, T., Wittwer, C. T., Yang, S.
2018

- **Universal digital high-resolution melt: a novel approach to broad-based profiling of heterogeneous biological samples** *NUCLEIC ACIDS RESEARCH*
Fraleley, S. I., Hardick, J., Masek, B. J., Athamanolap, P., Rothman, R. E., Gaydos, C. A., Carroll, K. C., Wakefield, T., Wang, T., Yang, S.
2013; 41 (18)
- **Molecular methods for pathogen detection in blood** *LANCET*
Lin, S., Yang, S.
2010; 375 (9710): 178-179
- **PCR-based diagnostics for infectious diseases: uses, limitations, and future applications in acute-care settings** *LANCET INFECTIOUS DISEASES*
Yang, S., Rothman, R. E.
2004; 4 (6): 337-348
- **Comparative study of encoded and alignment-based methods for virus taxonomy classification.** *Scientific reports*
Shaukat, M. A., Nguyen, T. T., Hsu, E. B., Yang, S., Bhatti, A.
2023; 13 (1): 18662
- **Neutrophil Extracellular Traps have DNase activity that drives bactericidal potential.** *bioRxiv : the preprint server for biology*
Ku, T., Ram-Mohan, N., Zudock, E. J., Abe, R., Yang, S.
2023
- **Development and external validation of a pretrained deep learning model for the prediction of non-accidental trauma.** *NPJ digital medicine*
Huang, D., Cogill, S., Hsia, R. Y., Yang, S., Kim, D.
2023; 6 (1): 131
- **Phage diversity in cell-free DNA identifies bacterial pathogens in human sepsis cases.** *Nature microbiology*
Haddock, N. L., Barkal, L. J., Ram-Mohan, N., Kaber, G., Chiu, C. Y., Bhatt, A. S., Yang, S., Bollyky, P. L.
2023
- **Rapid Molecular Phenotypic Antimicrobial Susceptibility Test for Neisseria gonorrhoeae Based on Propidium Monoazide Viability PCR.** *ACS infectious diseases*
Tjandra, K. C., Ram-Mohan, N., Abe, R., Wang, T. H., Yang, S.
2023
- **Development of a Definition of Postacute Sequelae of SARS-CoV-2 Infection.** *JAMA*
Thawweethai, T., Jolley, S. E., Karlson, E. W., Levitan, E. B., Levy, B., McComsey, G. A., McCorkell, L., Nadkarni, G. N., Parthasarathy, S., Singh, U., Walker, T. A., Selvaggi, C. A., Shinnick, et al
2023
- **Using a 29-mRNA Host Response Classifier To Detect Bacterial Coinfections and Predict Outcomes in COVID-19 Patients Presenting to the Emergency Department.** *Microbiology spectrum*
Ram-Mohan, N., Rogers, A. J., Blish, C. A., Nadeau, K. C., Zudock, E. J., Kim, D., Quinn, J. V., Sun, L., Liesenfeld, O., Yang, S.
2022: e0230522
- **Deconvoluting complex correlates of COVID-19 severity with a multi-omic pandemic tracking strategy.** *Nature communications*
Parikh, V. N., Ioannidis, A. G., Jimenez-Morales, D., Gorzynski, J. E., De Jong, H. N., Liu, X., Roque, J., Cepeda-Espinoza, V. P., Osoegawa, K., Hughes, C., Sutton, S. C., Youlton, N., Joshi, et al
2022; 13 (1): 5107
- **Phenotypes of disease severity in a cohort of hospitalized COVID-19 patients: Results from the IMPACC study.** *EBioMedicine*
Ozonoff, A., Schaeffer, J., Jayavelu, N. D., Milliren, C. E., Calfee, C. S., Cairns, C. B., Kraft, M., Baden, L. R., Shaw, A. C., Krammer, F., van Bakel, H., Esserman, D. A., Liu, et al
2022; 83: 104208
- **Anti-nucleocapsid antibody levels and pulmonary comorbid conditions are linked to post-COVID-19 syndrome.** *JCI insight*
Jia, X., Cao, S., Lee, A. S., Manohar, M., Sindher, S. B., Ahuja, N., Artandi, M., Blish, C. A., Blomkalns, A. L., Chang, I., Collins, W. J., Desai, M., Din, et al
2022; 7 (13)
- **Biochemical, biophysical, and immunological characterization of respiratory secretions in severe SARS-CoV-2 infections.** *JCI insight*
Kratochvil, M. J., Kaber, G., Demirdjian, S., Cai, P. C., Burgener, E. B., Nagy, N., Barlow, G. L., Popescu, M., Nicolls, M. R., Ozawa, M. G., Regula, D. P., Pacheco-Navarro, A. E., Yang, et al

2022; 7 (12)

- **Origin of novel coronavirus causing COVID-19: A computational biology study using artificial intelligence.** *Machine learning with applications*
Nguyen, T. T., Abdelrazek, M., Nguyen, D. T., Aryal, S., Nguyen, D. T., Reddy, S., Nguyen, Q. V., Khatami, A., Nguyen, T. T., Hsu, E. B., Yang, S.
2022: 100328
- **Diagnosis of Bloodstream Infections: An Evolution of Technologies towards Accurate and Rapid Identification and Antibiotic Susceptibility Testing.** *Antibiotics (Basel, Switzerland)*
Tjandra, K. C., Ram-Mohan, N., Abe, R., Hashemi, M. M., Lee, J., Chin, S. M., Roshardt, M. A., Liao, J. C., Wong, P. K., Yang, S.
2022; 11 (4)
- **Association Between SARS-CoV-2 RNAemia and Postacute Sequelae of COVID-19.** *Open forum infectious diseases*
Ram-Mohan, N., Kim, D., Rogers, A. J., Blish, C. A., Nadeau, K. C., Blomkalns, A. L., Yang, S.
2022; 9 (2): ofab646
- **A vacuum-assisted, highly parallelized microfluidic array for performing multi-step digital assays** *LAB ON A CHIP*
Hu, J., Chen, L., Zhang, P., Hsieh, K., Li, H., Yang, S., Wang, T.
2021; 21 (23): 4716-4724
- **Multi-omic profiling reveals widespread dysregulation of innate immunity and hematopoiesis in COVID-19.** *The Journal of experimental medicine*
Wilk, A. J., Lee, M. J., Wei, B., Parks, B., Pi, R., Martinez-Colon, G. J., Ranganath, T., Zhao, N. Q., Taylor, S., Becker, W., Stanford COVID-19 Biobank, Jimenez-Morales, D., Blomkalns, A. L., et al
2021; 218 (8)
- **Synthetic Siglec-9 Agonists Inhibit Neutrophil Activation Associated with COVID-19.** *ACS central science*
Delaveris, C. S., Wilk, A. J., Riley, N. M., Stark, J. C., Yang, S. S., Rogers, A. J., Ranganath, T., Nadeau, K. C., Blish, C. A., Bertozzi, C. R.
2021; 7 (4): 650-657
- **SARS-CoV-2 IgG Seropositivity and Acute Asymptomatic Infection Rate Among Firefighter First Responders in an Early Outbreak County in California.** *Prehospital emergency care : official journal of the National Association of EMS Physicians and the National Association of State EMS Directors*
Newberry, J. A., Gautreau, M., Staats, K., Carrillo, E., Mulkerin, W., Yang, S., Kohn, M. A., Matheson, L., Boyd, S. D., Pinsky, B. A., Blomkalns, A. L., Strehlow, M. C., D'Souza, et al
2021: 1-10
- **A Novel Platform Using RNA Signatures To Accelerate Antimicrobial Susceptibility Testing in Neisseria gonorrhoeae (vol 58, e01152-20, 2020)** *JOURNAL OF CLINICAL MICROBIOLOGY*
Hashemi, M. M., Ram-Mohan, N., Yang, X., Andini, N., Gessner, N. R., Carroll, K. C., Wang, T., Yang, S.
2021; 59 (3)
- **A Perspective on the Role of Point-of-Care "Immuno-Triaging" to Optimize COVID-19 Vaccination Distribution in a Time of Scarcity.** *Frontiers in public health*
Zhang, Y., Rogers, A., Nadeau, K., Gu, J., Yang, S.
2021; 9: 638316
- **A Rapid Single-Cell Antimicrobial Susceptibility Testing Workflow for Bloodstream Infections.** *Biosensors*
Forsyth, B., Torab, P., Lee, J. H., Malcom, T., Wang, T. H., Liao, J. C., Yang, S., Kvam, E., Puleo, C., Wong, P. K.
2021; 11 (8)
- **A novel platform to accelerate antimicrobial susceptibility testing in Neisseria gonorrhoeae using RNA signatures.** *Journal of clinical microbiology*
Hashemi, M. M., Ram-Mohan, N., Yang, X., Andini, N., Gessner, N. R., Carroll, K. C., Wang, T., Yang, S.
2020
- **RNA markers for ultra-rapid molecular antimicrobial susceptibility testing in fluoroquinolone-treated Klebsiella pneumoniae** *Journal of Antimicrobial Chemotherapy*
Yang, X., Hashemi, M. M., Andini, N., Li, M. M., Kuang, S., Carroll, K. C., Wang, T., Yang, S.
2020
- **FACTORS ASSOCIATED WITH INFLUENZA IN AN EMERGENCY DEPARTMENT SETTING** *JOURNAL OF EMERGENCY MEDICINE*
Pedersen, C. J., Quinn, J., Rogan, D. T., Yang, S.
2019; 56 (5): 478-83

- **A 'culture' shift: Application of molecular techniques for diagnosing polymicrobial infections** *BIOTECHNOLOGY ADVANCES*
Zhang, Y., Hu, A., Andini, N., Yang, S.
2019; 37 (3): 476–90
- **Emerging Analytical Techniques for Rapid Pathogen Identification and Susceptibility Testing.** *Annual review of analytical chemistry (Palo Alto, Calif.)*
Shin, D. J., Andini, N., Hsieh, K., Yang, S., Wang, T.
2019
- **Peripheral TREM1 responses to brain and intestinal immunogens amplify stroke severity** *Nature Immunology*
Liu, Q., Johnson, E., et al
2019
- **Nanoarray Digital Polymerase Chain Reaction with High-Resolution Melt for Enabling Broad Bacteria Identification and Pheno-Molecular Antimicrobial Susceptibility Test.** *Analytical chemistry*
Athamanolap, P. n., Hsieh, K. n., O'Keefe, C. M., Zhang, Y. n., Yang, S. n., Wang, T. H.
2019; 91 (20): 12784–92
- **Using a novel rapid viral test to improve triage of emergency department patients with acute respiratory illness during flu season** *JOURNAL OF CLINICAL VIROLOGY*
Pedersen, C. J., Rogan, D. T., Yang, S., Quinn, J.
2018; 108: 72-76
- **Using a novel rapid viral test to improve triage of emergency department patients with acute respiratory illness during flu season.** *Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology*
Pedersen, C. J., Rogan, D. T., Yang, S., Quinn, J. V.
2018; 108: 72–76
- **A review on cluster estimation methods and their application to neural spike data** *JOURNAL OF NEURAL ENGINEERING*
Zhang, J., Thanh Nguyen, Cogill, S., Bhatti, A., Luo, L., Yang, S., Nahavandi, S.
2018; 15 (3): 031003
- **Impact of Rapid Molecular Respiratory Virus Testing on Real-Time Decision Making in a Pediatric Emergency Department** *JOURNAL OF MOLECULAR DIAGNOSTICS*
Rogan, D. T., Kochar, M. S., Yang, S., Quinn, J. V.
2017; 19 (3): 460-467
- **Microbial Typing by Machine Learned DNA Melt Signatures** *SCIENTIFIC REPORTS*
Andini, N., Wang, B., Athamanolap, P., Hardick, J., Masek, B. J., Thair, S., Hu, A., Avornu, G., Peterson, S., Cogill, S., Rothman, R. E., Carroll, K. C., Gaydos, et al
2017; 7
- **Umbilical Cord Blood NOS1 as a Potential Biomarker of Neonatal Encephalopathy.** *Frontiers in pediatrics*
Lei, J. n., Paules, C. n., Nigrini, E. n., Rosenzweig, J. M., Bahabry, R. n., Farzin, A. n., Yang, S. n., Northington, F. J., Oros, D. n., McKenney, S. n., Johnston, M. V., Graham, E. M., Burd, et al
2017; 5: 112
- **Integrated Bacterial Identification and Antimicrobial Susceptibility Testing Using PCR and High-Resolution Melt.** *Analytical chemistry*
Athamanolap, P. n., Hsieh, K. n., Chen, L. n., Yang, S. n., Wang, T. H.
2017
- **RNA-Seq Count Data Modelling by Grey Relational Analysis and Nonparametric Gaussian Process** *PLOS ONE*
Thanh Nguyen, T., Bhatti, A., Yang, S., Nahavandi, S.
2016; 11 (10)
- **Nested Machine Learning Facilitates Increased Sequence Content for Large-Scale Automated High Resolution Melt Genotyping** *SCIENTIFIC REPORTS*
Fraleley, S. I., Athamanolap, P., Masek, B. J., Hardick, J., Carroll, K. C., Hsieh, Y., Rothman, R. E., Gaydos, C. A., Wang, T., Yang, S.
2015
- **A rabbit model of non-typhoidal Salmonella bacteremia** *COMPARATIVE IMMUNOLOGY MICROBIOLOGY AND INFECTIOUS DISEASES*
Panda, A., Tatarov, I., Masek, B. J., Hardick, J., Crusan, A., Wakefield, T., Carroll, K., Yang, S., Hsieh, Y., Lipsky, M. M., McLeod, C. G., Levine, M. M., Rothman, et al

2014; 37 (4): 211-220

- **Sensitive Detection and Serovar Differentiation of Typhoidal and Nontyphoidal Salmonella enterica Species Using 16S rRNA Gene PCR Coupled with High-Resolution Melt Analysis** *JOURNAL OF MOLECULAR DIAGNOSTICS*
Masek, B. J., Hardick, J., Won, H., Yang, S., Hsieh, Y., Rothman, R. E., Gaydos, C. A.
2014; 16 (2): 261-266
- **Trainable high resolution melt curve machine learning classifier for large-scale reliable genotyping of sequence variants.** *PloS one*
Athamanolap, P. n., Parekh, V. n., Fraley, S. I., Agarwal, V. n., Shin, D. J., Jacobs, M. A., Wang, T. H., Yang, S. n.
2014; 9 (9): e109094
- **Reverse Transcription-PCR-Electrospray Ionization Mass Spectrometry for Rapid Detection of Biothreat and Common Respiratory Pathogens** *JOURNAL OF CLINICAL MICROBIOLOGY*
Jeng, K., Hardick, J., Rothman, R., Yang, S., Won, H., Peterson, S., Hsieh, Y., Masek, B. J., Carroll, K. C., Gaydos, C. A.
2013; 51 (10): 3300-3307
- **An all-in-one microfluidic device for parallel DNA extraction and gene analysis (vol 12, pg 1043, 2010)** *BIOMEDICAL MICRODEVICES*
Zhang, Y., Park, S., Yang, S., Wang, T.
2013; 15 (2): 383
- **State of virtual reality based disaster preparedness and response training.** *PLoS currents*
Hsu, E. B., Li, Y., Bayram, J. D., Levinson, D., Yang, S., Monahan, C.
2013; 5
- **Harnessing Genomic Approaches for Infectious Disease Diagnosis in Emergency Medicine: Getting Closer to Prime Time** *ANNALS OF EMERGENCY MEDICINE*
Rothman, R. E., Yang, S., Hardick, J., Gaydos, C. A.
2012; 60 (5): 621-623
- **Comparative Analysis of Two Broad-Range PCR Assays for Pathogen Detection in Positive-Blood-Culture Bottles: PCR-High-Resolution Melting Analysis versus PCR-Mass Spectrometry** *JOURNAL OF CLINICAL MICROBIOLOGY*
Jeng, K., Gaydos, C. A., Blyn, L. B., Yang, S., Won, H., Matthews, H., Toleno, D., Hsieh, Y., Carroll, K. C., Hardick, J., Masek, B., Kecojevic, A., Sampath, et al
2012; 50 (10): 3287-3292
- **A broad range assay for rapid detection and etiologic characterization of bacterial meningitis: performance testing in samples from sub-Saharan** *DIAGNOSTIC MICROBIOLOGY AND INFECTIOUS DISEASE*
Won, H., Yang, S., Gaydos, C., Hardick, J., Ramachandran, P., Hsieh, Y., Kecojevic, A., Njanpop-Lafourcade, B., Mueller, J. E., Tameklo, T. A., Badziklou, K., Gessner, B. D., Rothman, et al
2012; 74 (1): 22-27
- **Identification of Bacterial Pathogens in Ascitic Fluids from Patients with Suspected Spontaneous Bacterial Peritonitis by Use of Broad-Range PCR (16S PCR) Coupled with High-Resolution Melt Analysis** *JOURNAL OF CLINICAL MICROBIOLOGY*
Hardick, J., Won, H., Jeng, K., Hsieh, Y., Gaydos, C. A., Rothman, R. E., Yang, S.
2012; 50 (7): 2428-2432
- **Application of a 16S rRNA PCR-High-Resolution Melt Analysis Assay for Rapid Detection of Salmonella Bacteremia** *JOURNAL OF CLINICAL MICROBIOLOGY*
Jeng, K., Yang, S., Won, H., Gaydos, C. A., Hsieh, Y., Kecojevic, A., Carroll, K. C., Hardick, J., Rothman, R. E.
2012; 50 (3): 1122-1124
- **Advances in microfluidic PCR for point-of-care infectious disease diagnostics** *BIOTECHNOLOGY ADVANCES*
Park, S., Zhang, Y., Lin, S., Wang, T., Yang, S.
2011; 29 (6): 830-839
- **Rapid Identification of Bacterial Pathogens in Positive Blood Culture Bottles by Use of a Broad-Based PCR Assay Coupled with High-Resolution Melt Analysis (vol 48, pg 3410, 2010)** *JOURNAL OF CLINICAL MICROBIOLOGY*
Won, H., Rothman, R., Ramachandran, P., Hsieh, Y., Kecojevic, A., Carroll, K. C., Aird, D., Gaydos, C., Yang, S.
2011; 49 (4): 1705
- **Continuous dielectrophoretic bacterial separation and concentration from physiological media of high conductivity** *LAB ON A CHIP*
Park, S., Zhang, Y., Wang, T., Yang, S.

2011; 11 (17): 2893-2900

- **A surface topography assisted droplet manipulation platform for biomarker detection and pathogen identification** *LAB ON A CHIP*
Zhang, Y., Park, S., Liu, K., Tsuan, J., Yang, S., Wang, T.
2011; 11 (3): 398-406
- **An all-in-one microfluidic device for parallel DNA extraction and gene analysis** *BIOMEDICAL MICRODEVICES*
Zhang, Y., Park, S., Yang, S., Wang, T.
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- **Rapid Identification of Bacterial Pathogens in Positive Blood Culture Bottles by Use of a Broad-Based PCR Assay Coupled with High-Resolution Melt Analysis** *JOURNAL OF CLINICAL MICROBIOLOGY*
Won, H., Rothman, R., Ramachandran, P., Hsieh, Y., Kecojevic, A., Carroll, K. C., Aird, D., Gaydos, C., Yang, S.
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- **Use of Quantitative Broad-based Polymerase Chain Reaction for Detection and Identification of Common Bacterial Pathogens in Cerebrospinal Fluid** *ACADEMIC EMERGENCY MEDICINE*
Rothman, R., Ramachandran, P., Yang, S., Hardick, A., Won, H., Kecojevic, A., Quianzon, C., Hsieh, Y., Gaydos, C.
2010; 17 (7): 741-747
- **Rapid Identification of Biothreat and Other Clinically Relevant Bacterial Species by Use of Universal PCR Coupled with High-Resolution Melting Analysis** *JOURNAL OF CLINICAL MICROBIOLOGY*
Yang, S., Ramachandran, P., Rothman, R., Hsieh, Y., Hardick, A., Won, H., Kecojevic, A., Jackman, J., Gaydos, C.
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- **HIV Seropositivity Predicts Longer Duration of Stay and Rehospitalization Among Nonbacteremic Febrile Injection Drug Users With Skin and Soft Tissue Infections** *Annual Meeting of the Society-for-Academic-Emergency-Medicine*
Hsieh, Y., Rothman, R. E., Bartlett, J. G., Yang, S., Kelen, G. D.
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- **Rapid polymerase chain reaction-based screening assay for bacterial biothreat agents** *Annual Meeting of the Society-for-Academic-Emergency-Medicine*
Yang, S., Rothman, R. E., Hardick, J., Kuroki, M., Hardick, A., Doshi, V., Ramachandran, P., Gaydos, C. A.
BLACKWELL PUBLISHING.2008: 388-92
- **Rapid PCR-based diagnosis of septic arthritis by early gram-type classification and pathogen identification** *JOURNAL OF CLINICAL MICROBIOLOGY*
Yang, S., Ramachandran, P., Hardick, A., Hsieh, Y., Quianzon, C., Kuroki, M., Hardick, J., Kecojevic, A., Abeygunawardena, A., Zenilman, J., Melendez, J., Doshi, V., Gaydos, et al
2008; 46 (4): 1386-1390
- **Global Surveillance of Emerging Influenza Virus Genotypes by Mass Spectrometry** *PLOS ONE*
Sampath, R., Russell, K. L., Massire, C., Eshoo, M. W., Harpin, V., Blyn, L. B., Melton, R., Ivy, C., Pennella, T., Li, F., Levene, H., Hall, T. A., Libby, et al
2007; 2 (5)
- **Communicable respiratory threats in the ED: Tuberculosis, influenza, SARS, and other aerosolized infections** *EMERGENCY MEDICINE CLINICS OF NORTH AMERICA*
Rothman, R. E., Hsieh, Y., Yang, S.
2006; 24 (4): 989-?
- **Multiplexed hybridization detection with multicolor colocalization of quantum dot nanoprobe** *NANO LETTERS*
Ho, Y. P., Kung, M. C., Yang, S., Wang, T. H.
2005; 5 (9): 1693-1697
- **Quantitative PCR assay using sputum samples for rapid diagnosis of pneumococcal pneumonia in adult emergency department patients** *JOURNAL OF CLINICAL MICROBIOLOGY*
Yang, S., Lin, S., Khalil, A., Gaydos, C., Nuemberger, E., Juan, G., Hardick, J., Bartlett, J. G., Auwaerter, P. G., Rothman, R. E.
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- **Real-time PCR for Chlamydia pneumoniae utilizing the Roche lightcycler and a 16S rRNA gene target** *JOURNAL OF MOLECULAR DIAGNOSTICS*
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2004; 6 (2): 132-136

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Hardick, J., Yang, S., Lin, S., Duncan, D., Gaydos, C.
2003; 41 (12): 5619-5622
- **Quantitative multiprobe PCR assay for simultaneous detection and identification to species level of bacterial pathogens** *JOURNAL OF CLINICAL MICROBIOLOGY*
Yang, S., Lin, S., Kelen, G. D., Quinn, T. C., Dick, J. D., Gaydos, C. A., Rothman, R. E.
2002; 40 (9): 3449-3454
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Lin, S., Yang, S., Hopkins, N.
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