

Stanford



Nicholas P. Marshall

- Affiliate, Department Funds
- Fellow in Pediatrics - Infectious Diseases

Bio

BIO

I am a fellow in Pediatric Infectious Diseases and Clinical Informatics, working to advance infectious diseases care through innovation and best practices. My research leverages machine learning to enhance clinical decision-making by delivering data-driven insights that optimize healthcare delivery and advance antimicrobial and diagnostic stewardship. Beyond my scholarly activities, I am passionate about medical education, quality improvement, and high-value care.

CLINICAL FOCUS

- Fellow
- Pediatric Infectious Diseases
- Antimicrobial Stewardship
- Immunocompromised Host
- Clinical Informatics

HONORS AND AWARDS

- Case Presentation Award, IDWeek 2025 (10/2025)
- Abstract Award, IDWeek 2025 (10/2025)
- Grant Recipient - Ernest and Amelia Gallo Endowed Fellow, Stanford Maternal & Child Health Research Institute (MCHRI) (07/2024)

PROFESSIONAL EDUCATION

- Fellowship, Stanford University , Clinical Informatics
- Fellowship, Stanford University , Pediatric Infectious Diseases
- Board Certification, American Board of Pediatrics , General Pediatrics (2023)
- Chief Residency, Cleveland Clinic Children's , General Pediatrics (2023)
- Residency, Cleveland Clinic Children's , General Pediatrics (2022)
- MD, Northeast Ohio Medical University (NEOMED) , Medicine (2019)
- BS, The University of Akron , Natural Sciences and Chemistry (2014)

Research & Scholarship

LAB AFFILIATIONS

- Jonathan Chen, HealthRex (1/1/2024)

Teaching

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Clinical Informatics (Fellowship Program)
- Pediatric Infectious Diseases (Fellowship Program)

Publications

PUBLICATIONS

- **Cultryx: Precision Diagnostic Stewardship for Blood Cultures Using Machine Learning.** *medRxiv : the preprint server for health sciences*
Marshall, N. P., Chen, W., Amrollahi, F., Haredasht, F. N., Maddali, M. V., Ma, S. P., Zahedivash, A., Black, K. C., Chang, A., Deresinski, S. C., Goldstein, M. K., Asch, S. M., Banaei, et al
2026
- **Performance of an Expert Recommendation Framework for Blood Culture Stewardship: Comparing Clinician Manual Review and Large Language Model Automation** *IDWeek*
Marshall, N. P., Amrollahi, F., Maddali, M., Black, K. C., Zahedivash, A., Nateghi Haredasht, F., Ma, S. P., Chang, A., Deresinski, S., Banaei, N., Goldstein, M. K., Asch, S. M., Chen, et al
2026
- **Machine Learning Models for Early Urinary Tract Infection (UTI) Prediction from Electronic Health Records** *IDWeek*
Marshall, N. P., Amrollahi, F., Nateghi Haredasht, F., Ma, S. P., Maddali, M. V., Chang, A., Deresinski, S., Banaei, N., Goldstein, M. K., Asch, S., Chen, J. H.
2026
- **From Broad to Best: A Structured, Automated, and Scalable EHR Approach to Evaluate Empiric Antibiotic Appropriateness** *IDWeek*
Chen, W., Marshall, N. P., Amrollahi, F., Nateghi Haredasht, F., Maddali, M. V., Ma, S. P., Chang, A., Deresinski, S., Goldstein, M. K., Asch, S., Banaei, N., Schwenk, H. T., Chen, et al
2026
- **Predicting Bacteremia in Emergency Departments: A Suite of Data-Driven Clinical Decision Tools** *IDWeek*
Marshall, N. P., Amrollahi, F., Nateghi Haredasht, F., Ma, S. P., Maddali, M. V., Chang, A., Deresinski, S., Banaei, N., Goldstein, M. K., Asch, S., Chen, J. H.
2026
- **Machine Learning Prediction of Pediatric Bacteremia: Development of EHR-Based Models for Diagnostic and Clinical Decision Support** *IDWeek*
Marshall, N. P., Amrollahi, F., Nateghi Haredasht, F., Black, K. C., Zahedivash, A., Maddali, M. V., Ma, S. P., Chang, A., Deresinski, S., Goldstein, M. K., Asch, S., Banaei, N., Chen, et al
2026
- **Antibiotic Resistance Microbiology Dataset (ARMD): A Resource for Antimicrobial Resistance from EHRs.** *Scientific data*
Nateghi Haredasht, F., Amrollahi, F., Maddali, M. V., Marshall, N., Ma, S. P., Cooper, L. N., Johnson, A. O., Wei, Z., Medford, R. J., Kanjilal, S., Banaei, N., Deresinski, S., Goldstein, et al
2025; 12 (1): 1299
- **Pre-Transplant Initiation of Direct-Acting Antiviral Therapy for Donor-Derived Hepatitis C in a Pediatric Patient** *International Society for Heart and Lung Transplantation (ISHLT)*
Kushner, L. E., Marshall, N. P., Schwenk, H. T., Almond, C., Ma, M., Puckett, L., Lee, J., Chen, S. F., Profita, E.
ISHLT 2025 Scientific Program.2025
- **First, do NOHARM: towards clinically safe large language models**
Wu, D., et al
ArXiv.
2025
- **Machine Learning-Based Prediction of Antimicrobial Susceptibility: A Step Towards Precision Antimicrobial Stewardship.** *AMIA ... Annual Symposium proceedings. AMIA Symposium*

Amrollahi, F., Haredasht, F. N., Vansomphone, A., Marshall, N., Maddali, M. V., Ma, S. P., Chang, A., Deresinski, S. C., Goldstein, M. K., Kanjilal, S., Medford, R. J., Cooper, L. N., Asch, et al
2024; 2024: 138-146

- **A Multi-Phase Analysis of Blood Culture Stewardship: Machine Learning Prediction, Expert Recommendation Assessment, and LLM Automation.** *AMIA ... Annual Symposium proceedings. AMIA Symposium*

Amrollahi, F., Marshall, N., Haredasht, F. N., Black, K. C., Zahedivash, A., Maddali, M. V., Ma, S. P., Chang, A., Deresinski, S. C., Goldstein, M. K., Asch, S. M., Banaei, N., Chen, et al
2024; 2024: 147-156

- **Surgical Prophylaxis in Pediatric Liver Transplant Recipients: Variations in Protocol and Impact on 30-Day Surgical Site Infections** *IDWeek*

Marshall, N. P., Foster, C. B., Aragon, V., Hashimoto, K., Gonzalez, B. E.
2022