Stanford



Pratik Sinha

Associate Professor of Anesthesiology, Perioperative and Pain Medicine (Critical Care Anesthesia)

CLINICAL OFFICE (PRIMARY)

- **Anesthesia Department**

  300 Pasteur Dr Rm H3580

  MC 5640

  Stanford, CA 94305

  Tel (650) 723-6412 **Fax** (650) 725-8544

Bio

CLINICAL FOCUS

- Critical Care Medicine

ACADEMIC APPOINTMENTS

- Associate Prof-Univ Med Line, Anesthesiology, Perioperative and Pain Medicine

PROFESSIONAL EDUCATION

- Board Certification: Intensive Care Medicine, College of Intensive Care Medicine (2020)
- Fellowship: Royal College of Emergency Medicine (2014) United Kingdom
- Board Certification: Emergency Medicine, Royal College of Emergency Medicine (2008)
- Residency: St. George Hospital Critical Care Dept (2006) Australia
- Medical Education: University of Manchester Medical School (2002) England
- FFICM, London Deanery , Critical Care Medicine (2014)
- FRCEM, London Deanery , Emergency Medicine (2014)
- PhD, Imperial College, London , Respiratory Physiology (2013)
- MB ChB, University of Manchester , Medicine (2002)
- BSc, University of Manchester , Biological Sciences (2001)

Publications

PUBLICATIONS

- **Real-time Subgrouping of Sepsis and Systemic Inflammatory Syndromes.** *Critical care clinics*
  McMullan, R., Bhavani, S. V., Sinha, P.
  2026; 42 (4): 839-855

- **Virus reactivation in acute and long COVID-19.** *Nature*

Maguire, C., Chen, J., Rouphael, N., Morse, B. A., Hoch, A., Pickering, H., Phan, H. V., Glascock, A., Chu, V., Dandekar, R., Corry, D., Kheradmand, F., Baden, et al

2026

- **Inflammatory trajectories as intermediate endpoints: signal, surrogate, or solution?** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*

  van der Heijden, W. A., Sinha, P.

  2026; 212 (8): 1683-1685

- **Global Viral Lower Respiratory Disease Episodes, Hospitalisations, and Clinical Outcomes by Aetiology, 2010-2021** *INFECTIOUS DISEASES AND THERAPY*

  Maslova, E., Rafferty, Q., Lei, J., Wang, C., Suba, J., Pasovic, M., Ewald, S., Del Castillo, D., Lupton, C., Qiao, Y., Fageras, M., Sinha, P., Gillespie, et al

  2026; 15 (9): 2523-2543

- **The ARDS, Pneumonia, and Sepsis (APS) Consortium: Rationale, Design, and Feasibility of a National Platform for Phenotyping Critical Illness Syndromes.** *Chest*

  Self, W. H., Calfee, C. S., Brown, S. M., Moss, M., Ware, L. B., Hyzy, R. C., Meyer, N. J., Reilly, J. P., Harhay, M. O., Shashaty, M. G., Sandsmark, D. K., Auriemma, C. L., Jones, et al

  2026

- **Effects of inflammatory phenotypes in acute respiratory distress syndrome on mortality and partitioning of lung and chest wall mechanics in patients in the USA and Canada: a retrospective cohort study** *LANCET RESPIRATORY MEDICINE*

  Pensier, J., Fosset, M., Paschold, B., von Wedel, D., Sharif, M., Braeuer, B. L. P., D Sahli, S., Novack, V., Goodspeed, V., Sarge, T., Jung, B., Amato, M. B. P., Sinha, et al

  2026; 14 (7): 609-619

- **Bedside identification of subphenotypes in acute respiratory failure (PHIND): a multicentre, observational cohort study** *LANCET RESPIRATORY MEDICINE*

  Reddy, K., Sinha, P., Antcliffe, D. B., McDowell, C., Bradley, P. A., Black, L., Murphy, L., Barbaras, J., Conlon, J., Camporota, L., Ostermann, M., Hopkins, P., Szakmany, et al

  2026; 14 (7): 589-600

- **Early immune events during SARS-CoV-2 infection impact memory T and B cell responses.** *Communications biology*

  Woloszczuk, K., Joyner, D., Connors, J., Bernui, M., Canziani, G., Chaiken, I., Burger, J., van Gils, M. J., van Rijswijk, J., Olijhoek, W., Venkateswaren, K. V., Venkateswaran, N., Bosinger, et al

  2026

- **What Is Sepsis, Who Gets It, How, and Why? The Keys to Unlocking Precision Medicine in Sepsis** *CRITICAL CARE MEDICINE*

  Gay, E. A., Meyer, N. J., Sinha, P.

  2026; 54 (4): 983-994

- **The host response in sepsis: can it be quantified?** *LANCET RESPIRATORY MEDICINE*

  Sinha, P., Meyer, N. J.

  2026; 14 (4): 285-286

- **Pathogen characteristics are key determinants of distinct host response phenotypes of sepsis** *JOURNAL OF CLINICAL INVESTIGATION*

  Chanderraj, R., Bartek, B., Stringer, K. A., Tiba, M. H., Sjoding, M. W., He, Y., Nuppnau, M., Bongers, K. S., Adame, M. D., Lou, S. S., Kerschberger, V., Churpek, M. M., Calfee, et al

  2026; 136 (6)

- **Empiric azithromycin alters the upper respiratory microbiome and resistome without anti-inflammatory benefit in COVID-19.** *Nature microbiology*

  Glascock, A., Maguire, C., Phan, H. V., Lydon, E. C., Schaenman, J., Calfee, C. S., Melamed, E., Greenland, J., Corry, D. B., Kheradmand, F., Baden, L. R., Sekaly, R., McComsey, et al

  2026

- **Author Correction: Machine learning models predict long COVID outcomes based on baseline clinical and immunologic factors.** *Communications medicine*

  Doni Jayavelu, N., Samaha, H., Wimalasena, S. T., Hoch, A., Gygi, J. P., Gabernet, G., Ozonoff, A., Liu, S., Milliren, C. E., Levy, O., Baden, L. R., Melamed, E., Ehrlich, et al

  2026; 6 (1)

- **Machine learning models predict long COVID outcomes based on baseline clinical and immunologic factors.** *Communications medicine*
  Doni Jayavelu, N., Samaha, H., Wimalasena, S. T., Hoch, A., Gygi, J. P., Gabernet, G., Ozonoff, A., Liu, S., Milliren, C. E., Levy, O., Baden, L. R., Melamed, E., Ehrlich, et al
  2026; 6 (1): 1

- **Short stature is an independent risk factor for ventilatory inefficiency and higher mortality in acute respiratory distress syndrome** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*
  Monteiro, A., Bartek, B., Tripathi, S., Calfee, C. S., Matthay, M. A., Sinha, P.
  2026; 212 (1): 161-164

- **Longitudinal multi-omic signatures of ARDS and sepsis inflammatory phenotypes identify pathways associated with mortality.** *The Journal of clinical investigation*
  Alipanah-Lechner, N., Neyton, L., Sinha, P., Leroux, C., Bardillon, K., Carrillo, S. A., Chak, S., Chao, O., Hariharan, T., Hendrickson, C., Kangelaris, K., Langelier, C. R., Lee, et al
  2025

- **Prognostic Relevance of Inflammatory Subphenotypes in Immunocompromised Patients With Sepsis** *CRITICAL CARE MEDICINE*
  Weingart, M. F., Willmore, A., Zhuo, H., Magee, L., Chao, O., Lin, C., Schmiege, E., Hariharan, T., Chak, S., Bardillon, K., Lee, D., Leroux, C., Obeidalla, et al
  2025; 53 (12): e2429-e2439

- **Individualised treatment effects of enhanced early mobilisation in mechanically ventilated patients: a secondary analysis of the TEAM trial** *INTENSIVE CARE MEDICINE*
  Hodgson, C. L., Spicer, A. B., Broadley, T., Bailey, M., Bellomo, R., Brickell, K., Buhr, H., Gabbe, B. J., Gould, D. W., Harrold, M., Higgins, A. M., Hurford, S., Iwashyna, et al
  2026; 52 (1): 11-21

- **Type 2 immune responses are associated with less severe COVID-19 in a hospitalized cohort.** *The journal of allergy and clinical immunology. Global*
  Jayavelu, N. D., Qi, J., Milliren, C. E., Ozonoff, A., Liu, S., Levy, O., Baden, L. R., Melamed, E., McComsey, G. A., Cairns, C. B., Schaenman, J., Shaw, A. C., Hafler, et al
  2025; 4 (4): 100515

- **Circulating endothelial signatures correlate with worse outcomes in COVID-19, respiratory failure and ARDS.** *Critical care (London, England)*
  Costa Monteiro, A. C., Pickering, H., Sarma, A., Taylor, C. S., Jenkins, M. M., Hsu, F. M., Nadel, B., Levy, O., Baden, L. R., Melamed, E., Ehrlich, L. I., McComsey, G. A., Sekaly, et al
  2025; 29 (1): 432

- **Premorbid Metabolic Syndrome Is Associated with the Hypoinflammatory Phenotype in Acute Respiratory Distress Syndrome and Sepsis** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*
  Bogart, A. M., Obeidalla, S. N., Van Amstel, R. B. E., Cremer, O., Bos, L. D. J., Bartek, B., Sinha, P. S., Calfee, C. S., Kerchberger, V., Ware, L. B., MARS Consortium
  2025; 211 (12): 2399-2401

- **ARDS Molecular Phenotypes Have Distinct Lower Respiratory Tract Transcriptomes.** *American journal of respiratory and critical care medicine*
  Sarma, A., Christenson, S. A., Zha, B. S., Pisco, A. O., Neyton, L. P., Mick, E., Sinha, P. S., Wilson, J. G., Moazed, F., Leligdowicz, A., Maddali, M. V., Siegel, E. R., Lyon, et al
  2025

- **Longitudinal multi-omic signatures of ARDS and sepsis inflammatory phenotypes identify key pathways associated with mortality.** *medRxiv : the preprint server for health sciences*
  Alipanah-Lechner, N., Neyton, L., Sinha, P., Leroux, C., Bardillon, K., Carrillo, S. A., Chak, S., Chao, O., Hariharan, T., Henrickson, C., Kangelaris, K., Langelier, C. R., Lee, et al
  2025

- **Bedside prospective identification of ARDS subphenotypes: a multicentre study - an ERS Clinical Research Collaboration**
  Reddy, K., O'Kane, C., Antcliffe, D., Mcdowell, C., Bradley, P., Black, L., Murphy, L., Shankar-Hari, M., Gordon, A., Shyamsundar, M., Delucchi, K., Sinha, P., Calfee, et al
  EUROPEAN RESPIRATORY SOC JOURNALS LTD.2025

- **Multivariate protein landscape of host response in hospitalised patients with suspected infection in the emergency department** *NATURE COMMUNICATIONS*

Sinha, P., Spicer, A. B., Bhavani, S., Lopez-Espina, C., Watson, G. L., Bhargava, A., Schmalz, L., Khan, S., Sims, M. D., Palagiri, A. V., Dagan, A., Iyer, K. V., Crisp, et al

2025; 16 (1): 7848

- **Host-Microbe Multiomic Profiling Predicts Mortality in Sepsis.** *American journal of respiratory and critical care medicine*

  Spottiswoode, N., Neyton, L. P., Mick, E., Kalantar, K. L., Hao, S., Lydon, E. C., Narendra, R., Serpa, P. H., Caldera, S., Gomez, A., Hendrickson, C., Kangelaris, K., Liu, et al

  2025

- **Biologic Mechanisms Underlying the Heterogeneous Response to Tight Glycemic Control among Differentially Inflamed Patients in the HALF-PINT Trial** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*

  Zinter, M. S., Taylor, C. S., Markovic, D., Pellegrini, M., Wong, K., Balliu, B., Gala, K. P., Asaro, L. A., Nadkarni, V. M., McQuillen, P. S., Vangala, S. S., Sinha, P., Matthay, et al

  2025; 211 (8): 1463-1473

- **Plasma Soluble Intercellular Adhesion Molecule-1 Has a Central Role in Biomarker Network Analysis and Is Associated With Poor Outcomes in Two Distinct Pediatric Cohorts of Acute Respiratory Distress Syndrome and Acute Respiratory Failure** *CRITICAL CARE MEDICINE*

  Lim, M. J., Whitney, J. E., Sallee, C. J., Markovic, D., Bera, A., Sinha, P., Zeigler, A., Chen, L., Zinter, M. S., Ali, A., Matthay, M. A., Schwingshackl, A., Agus, et al

  2025; 53 (7): e1457-e1469

- **Elastance May Determine the Neuromuscular Blockade Effect on Mortality in Acute Respiratory Distress Syndrome** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*

  Zalucky, A. A., Dianti, J., Neyton, L. P. A., Sinha, P., Liu, K. D., Matthay, M. A., Thompson, B., Goligher, E. C., Calfee, C. S.

  2025; 211 (6): 966-974

- **Evidence-based personalised medicine in critical care: a framework for quantifying and applying individualised treatment effects in patients who are critically ill** *LANCET RESPIRATORY MEDICINE*

  Munroe, E. S., Spicer, A., Castellvi-Font, A., Zalucky, A., Dianti, J., Linck, E., Talisa, V., Urner, M., Angus, D. C., Baedorf-Kassis, E., Blette, B., Bos, L. D., Buell, et al

  2025; 13 (6): 556-568

- **Temporal Transitions of the Hyperinflammatory and Hypoinflammatory Phenotypes in Critical Illness** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*

  van Amstel, R. B. E., Bartek, B., Vlaar, A. P. J., Gay, E., van Vught, L. A., Cremer, O. L., van der Poll, T., Shapiro, N. I., Matthay, M. A., Calfee, C. S., Sinha, P., Bos, L. D. J., NHLBI PETAL Network, et al

  2025; 211 (3): 347-356

- **Host-microbe multiomic profiling identifies distinct COVID-19 immune dysregulation in solid organ transplant recipients.** *Nature communications*

  Pickering, H., Schaenman, J., Phan, H. V., Maguire, C., Tsitsiklis, A., Rouphael, N., Higuita, N. I., Atkinson, M. A., Brakenridge, S., Fung, M., Messer, W., Salehi-Rad, R., Altman, et al

  2025; 16 (1): 586

- **Precision Medicine in Acute Respiratory Distress Syndrome Progress, Challenges, and the Road ahead** *CLINICS IN CHEST MEDICINE*

  Leonard, J., Sinha, P.

  2024; 45 (4): 835-848

- **Distinct immune profiles and clinical outcomes in sepsis subphenotypes based on temperature trajectories** *INTENSIVE CARE MEDICINE*

  Bhavani, S. V., Spicer, A., Sinha, P., Malik, A., Lopez-Espina, C., Schmalz, L., Watson, G. L., Bhargava, A., Khan, S., Urdiales, D., Updike, L., Dagan, A., Davila, et al

  2024; 50 (12): 2094-2104

- **Machine Learning-Driven Analysis of Individualized Treatment Effects Comparing Buprenorphine and Naltrexone in Opioid Use Disorder Relapse Prevention** *JOURNAL OF ADDICTION MEDICINE*

  Afshar, M., Linck, E., Spicer, A. B., Rotrosen, J., Salisbury-Afshar, E. M., Sinha, P., Semler, M. W., Churpek, M. M.

  2024; 18 (5): 511-519

- **Molecular Endotypes of Idiopathic Pulmonary Fibrosis: A Latent Class Analysis of Two Multicenter Observational Cohorts.** *American journal of respiratory and critical care medicine*

Maddali, M. V., Moore, A. R., Sinha, P., Newton, C. A., Kim, J. S., Adegunsoye, A., Ma, S. F., Strek, M. E., Chen, C. H., Linderholm, A. L., Zemans, R. L., Moore, B. B., Wolters, et al

2024

- **Causes and attributable fraction of death from ARDS in inflammatory phenotypes of sepsis** *CRITICAL CARE*

  Evrard, B., Sinha, P., Delucchi, K., Hendrickson, C. M., Kangelaris, K. N., Liu, K. D., Willmore, A., Wu, N., Neyton, L., Schmiege, E., Gomez, A., Kerchberger, V., Zalucky, et al

  2024; 28 (1): 164

- **Rapidly improving ARDS differs clinically and biologically from persistent ARDS** *CRITICAL CARE*

  Valda Toro, P. L., Willmore, A., Wu, N. E., Delucchi, K. L., Jauregui, A., Sinha, P., Liu, K. D., Hendrickson, C. M., Sarma, A., Neyton, L. P. A., Leligdowicz, A., Langelier, C. R., Zhuo, et al

  2024; 28 (1): 132

- **Host and Microbe Blood Metagenomics Reveals Key Pathways Characterizing Critical Illness Phenotypes** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*

  Neyton, L. P. A., Sinha, P., Sarma, A., Mick, E., Kalantar, K., Chen, S., Wu, N., Delucchi, K., Zhuo, H., Bos, L. D. J., Jauregui, A., Gomez, A., Hendrickson, et al

  2024; 209 (7): 805-815

- **Molecular Phenotypes of Acute Respiratory Distress Syndrome in the ROSE Trial Have Differential Outcomes and Gene Expression Patterns That Differ at Baseline and Longitudinally over Time** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*

  Sinha, P., Neyton, L., Sarma, A., Wu, N., Jones, C., Zhuo, H., Liu, K. D., Guerrero, E., Ghale, R., Love, C., Mick, E., Delucchi, K. L., Langelier, et al

  2024; 209 (7): 816-828

- **Individualized Treatment Effects of Oxygen Targets in Mechanically Ventilated Critically Ill Adults** *JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*

  Buell, K. G., Spicer, A. B., Casey, J. D., Seitz, K. P., Qian, E. T., Graham Linck, E. J., Self, W. H., Rice, T. W., Sinha, P., Young, P. J., Semler, M. W., Churpek, M. M.

  2024; 331 (14): 1195-1204

- **IgM N-glycosylation correlates with COVID-19 severity and rate of complement deposition.** *Nature communications*

  Haslund-Gourley, B. S., Woloszczuk, K., Hou, J., Connors, J., Cusimano, G., Bell, M., Taramangalam, B., Fourati, S., Mege, N., Bernui, M., Altman, M. C., Krammer, F., van Bakel, et al

  2024; 15 (1): 404

- **Features of acute COVID-19 associated with post-acute sequelae of SARS-CoV-2 phenotypes: results from the IMPACC study.** *Nature communications*

  Ozonoff, A., Jayavelu, N. D., Liu, S., Melamed, E., Milliren, C. E., Qi, J., Geng, L. N., McComsey, G. A., Cairns, C. B., Baden, L. R., Schaenman, J., Shaw, A. C., Samaha, et al

  2024; 15 (1): 216

- **Analysis of Protein Biomarkers From Hospitalized COVID-19 Patients Reveals Severity-Specific Signatures and Two Distinct Latent Profiles With Differential Responses to Corticosteroids** *CRITICAL CARE MEDICINE*

  Verhoef, P. A., Spicer, A. B., Lopez-Espina, C., Bhargava, A., Schmalz, L., Sims, M. D., Palagiri, A. V., Iyer, K. V., Crisp, M. J., Halalau, A., Maddens, N., Gosai, F., Syed, et al

  2023; 51 (12): 1697-1705

- **Identifying molecular phenotypes in sepsis: an analysis of two prospective observational cohorts and secondary analysis of two randomised controlledtrials** *LANCET RESPIRATORY MEDICINE*

  Sinha, P., Kerchberger, V., Willmore, A., Chambers, J., Zhuo, H., Abbott, J., Jones, C., Wickersham, N., Wu, N., Neyton, L., Langelier, C. R., Mick, E., He, et al

  2023; 11 (11): 965-974

- **Simvastatin in Critically Ill Patients with Covid-19** *NEW ENGLAND JOURNAL OF MEDICINE*

  Hills, T. E., Lorenzi, E., Berry, L. R., Shyamsundar, M., Al-Beidh, F., Annane, D., Arabi, Y., Aryal, D., Au, C., Beane, A., Bhimani, Z., Bonten, M., Bradbury, et al

  2023: 2341-2354

- **Identification of molecular subphenotypes in two cohorts of paediatric ARDS** *THORAX*

  Yehya, N., Zinter, M. S., Thompson, J. M., Lim, M. J., Hanudel, M. R., Alkhouli, M. F., Wong, H., Alder, M. N., Mckeone, D. J., Halstead, E., Sinha, P., Sapru, A.

2024; 79 (2): 128-134

- **Leveraging Data Science and Novel Technologies to Develop and Implement Precision Medicine Strategies in Critical Care** *CRITICAL CARE CLINICS*
  Sanchez-Pinto, L. N., V. Bhavani, S., Atreya, M. R., Sinha, P.
  2023; 39 (4): 627-646

- **Elevated Plasma Interleukin-18 Identifies High-Risk Acute Respiratory Distress Syndrome Patients not Distinguished by Prior Latent Class Analyses Using Traditional Inflammatory Cytokines: A Retrospective Analysis of Two Randomized Clinical Trials.** *Critical care medicine*
  Moore, A. R., Pienkos, S. M., Sinha, P., Guan, J., O'Kane, C. M., Levitt, J. E., Wilson, J. G., Shankar-Hari, M., Matthay, M. A., Calfee, C. S., Baron, R. M., McAuley, D. F., Rogers, et al
  2023

- **Subphenotypes Assigned to Pediatric Acute Respiratory Failure Patients Show Differing Outcomes** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*
  Flori, H. R., Zhang, M., Xie, J., Yang, G., Sapru, A., Calfee, C. S., Delucchi, K. L., Sinha, P., Curley, M. A. Q., Dahmer, M. K., RESTORE Bali Study Investigators, Pediat Acute Lung Injury Sepsis I
  2023; 208 (3): 331-333

- **Advancing specificity in delirium: The delirium subtyping initiative** *ALZHEIMERS & DEMENTIA*
  Bowman, E. M. L., Brummel, N. E. E., Caplan, G. A. A., Cunningham, C., Evered, L. A. A., Fiest, K. M. M., Girard, T. D. D., Jackson, T. A. A., LaHue, S. C. C., Lindroth, H. L. L., Maclullich, A. M. J., McAuley, D. F. F., Oh, et al
  2024; 20 (1): 183-194

- **Estimating the attributable fraction of mortality from acute respiratory distress syndrome to inform enrichment in future randomised clinical trials.** *Thorax*
  Saha, R., Pham, T., Sinha, P., Maddali, M. V., Bellani, G., Fan, E., Summers, C., Douiri, A., Rubenfeld, G. D., Calfee, C. S., Laffey, J. G., McAuley, D. F., Shankar-Hari, et al
  2023

- **Individualized Treatment Effects of Bougie versus Stylet for Tracheal Intubation in Critical Illness** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*
  Seitz, K. P., Spicer, A. B., Casey, J. D., Buell, K. G., Qian, E. T., Linck, E., Driver, B. E., Self, W. H., Ginde, A. A., Trent, S. A., Gandotra, S., Smith, L. M., Page, et al
  2023; 207 (12): 1602-1611

- **Tight Glycemic Control, Inflammation, and the ICU: Evidence for Heterogeneous Treatment Effects in Two Randomized Controlled Trials** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*
  Zinter, M. S., Markovic, D., Asaro, L. A., Nadkarni, V. M., McQuillen, P. S., Sinha, P., Matthay, M. A., Jeschke, M. G., Agus, M. S. D., Sapru, A., PALISI Network
  2023; 207 (7): 945-949

- **Are There Distinct Cardiovascular Subclasses in Acute Respiratory Distress Syndrome? Maybe** *CRITICAL CARE MEDICINE*
  Sinha, P., Lawler, P. R.
  2023; 51 (4): 546-549

- **Ultrasensitive lateral-flow assays via plasmonically active antibody-conjugated fluorescent nanoparticles** *NATURE BIOMEDICAL ENGINEERING*
  Gupta, R., Gupta, P., Wang, S., Melnykov, A., Jiang, Q., Seth, A., Wang, Z., Morrissey, J. J., George, I., Gandra, S., Sinha, P., Storch, G. A., Parikh, et al
  2023; 7 (12): 1556-+

- **Plasma metabolic profiling implicates dysregulated lipid metabolism and glycolytic shift in hyperinflammatory ARDS.** *American journal of physiology. Lung cellular and molecular physiology*
  Alipanah-Lechner, N., Neyton, L., Mick, E., Willmore, A., Leligdowicz, A., Contrepois, K., Jauregui, A., Zhuo, H., Hendrickson, C., Gomez, A., Sinha, P., Kangelaris, K. N., Liu, et al
  2023

- **Biological Phenotyping in Sepsis and Acute Respiratory Distress Syndrome** *ANNUAL REVIEW OF MEDICINE*
  Sinha, P., Meyer, N. J., Calfee, C. S.
  2023; 74: 457-471

- **IDENTIFICATION OF MOLECULAR ENDOTYPES IN TWO COHORTS OF PEDIATRIC ARDS**
  Yehya, N., Zinter, M., Thompson, J., Lim, M., Hanudel, M., Alkhouli, M., Alder, M., McKeone, D., Halstead, E., Sinha, P., Sapru, A.
  LIPPINCOTT WILLIAMS & WILKINS.2023: 12

- **Multistate Modeling of Clinical Trajectories and Outcomes in the ICU: A Proof-of- Concept Evaluation of Acute Kidney Injury Among Critically Ill Patients With COVID-19** *CRITICAL CARE EXPLORATIONS*
  Lyons, P. G., Mody, A., Bewley, A. F., Schoer, M., Raju, B., Geng, E., Payne, P. R. O., Sinha, P., Vijayan, A.
  2022; 4 (12)

- **Multistate Modeling of Clinical Trajectories and Outcomes in the ICU: A Proof-of-Concept Evaluation of Acute Kidney Injury Among Critically Ill Patients With COVID-19.** *Critical care explorations*
  Lyons, P. G., Mody, A., Bewley, A. F., Schoer, M., Neelam Raju, B., Geng, E., Payne, P. R., Sinha, P., Vijayan, A.
  2022; 4 (12): e0784

- **Integrated host-microbe plasma metagenomics for sepsis diagnosis in a prospective cohort of critically ill adults** *NATURE MICROBIOLOGY*
  Kalantar, K. L., Neyton, L., Abdelghany, M., Mick, E., Jauregui, A., Caldera, S., Serpa, P., Ghale, R., Albright, J., Sarma, A., Tsitsiklis, A., Leligdowicz, A., Christenson, et al
  2022; 7 (11): 1805-+

- **Hospital trajectories and early predictors of clinical outcomes differ between SARS-CoV-2 and influenza pneumonia** *EBIOMEDICINE*
  Lyons, P. G., V. Bhavani, S., Mody, A., Bewley, A., Dittman, K., Doyle, A., Windham, S. L., Patel, T. M., Raju, B., Keller, M., Churpek, M. M., Calfee, C. S., Michelson, et al
  2022; 85: 104295

- **The prognostic value of early measures of the ventilatory ratio in the ARDS ROSE trial** *CRITICAL CARE*
  Monteiro, A., Vangala, S., Wick, K. D., Delucchi, K. L., Siegel, E. R., Thompson, B., Liu, K. D., Sapru, A., Sinha, P., Matthay, M. A., NHLBI PETAL Network
  2022; 26 (1): 297

- **Plasma SARS-CoV-2 nucleocapsid antigen levels are associated with progression to severe disease in hospitalized COVID-19** *CRITICAL CARE*
  Wick, K. D., Leligdowicz, A., Willmore, A., Carrillo, S. A., Ghale, R., Jauregui, A., Chak, S. S., Viet Nguyen, Lee, D., Jones, C., Dewar, R., Lane, H., Kangelaris, K. N., et al
  2022; 26 (1): 278

- **Ventilatory Ratio Is a Valuable Prognostic Indicator in an Observational Cohort of Patients With ARDS** *RESPIRATORY CARE*
  Siegel, E. R., Zhuo, H., Sinha, P., Papolos, A., Ni, S. A., Vessel, K., Belzer, A., Minus, E. B., Calfee, C. S., Matthay, M. A., Wick, K. D.
  2022; 67 (9): 1075-1081

- **Opportunities for improved clinical trial designs in acute respiratory distress syndrome.** *The Lancet. Respiratory medicine*
  Wick, K. D., Aggarwal, N. R., Curley, M. A., Fowler, A. A., Jaber, S., Kostrubiec, M., Lassau, N., Laterre, P. F., Lebreton, G., Levitt, J. E., Mebazaa, A., Rubin, E., Sinha, et al
  2022; 10 (9): 916-924

- **Opportunities for improved clinical trial designs in acute respiratory distress syndrome** *LANCET RESPIRATORY MEDICINE*
  Wick, K. D., Aggarwal, N. R., Curley, M. A. Q., Fowler, A. A., Jaber, S., Kostrubiec, M., Lassau, N., Laterre, P., Lebreton, G., Levitt, J. E., Mebazaa, A., Rubin, E., Sinha, et al
  2022; 10 (9): 916-924

- **Phenotypes of disease severity in a cohort of hospitalized COVID-19 patients: Results from the IMPACC study.** *EBioMedicine*
  Ozonoff, A., Schaenman, 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

- **Towards a biological definition of ARDS: are treatable traits the solution?** *INTENSIVE CARE MEDICINE EXPERIMENTAL*
  Bos, L. D. J., Laffey, J. G., Ware, L. B., Heijnen, N. F. L., Sinha, P., Patel, B., Jabaudon, M., Bastarache, J. A., McAuley, D. F., Summers, C., Calfee, C. S., Shankar-Hari, M.
  2022; 10 (1)

- **Towards a biological definition of ARDS: are treatable traits the solution?** *Intensive care medicine experimental*

Bos, L. D., Laffey, J. G., Ware, L. B., Heijnen, N. F., Sinha, P., Patel, B., Jabaudon, M., Bastarache, J. A., McAuley, D. F., Summers, C., Calfee, C. S., Shankar-Hari, M.

2022; 10 (1): 8

- **Identification of phenotypes in paediatric patients with acute respiratory distress syndrome: a latent class analysis** *LANCET RESPIRATORY MEDICINE*

  Dahmer, M. K., Yang, G., Zhang, M., Quasney, M. W., Sapru, A., Weeks, H. M., Sinha, P., Curley, M. A. Q., Delucchi, K. L., Calfee, C. S., Flori, H., RESTORE BALI Study Investigators P

  2022; 10 (3): 289-297

- **Time to Tailor the One-Size-Fits-All Approach? Reply** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*

  Furfaro, D. M., Sinha, P., Calfee, C. S., Brodie, D., O'Donnell, M. R.

  2022; 205 (4): 480-+

- **Reply to Kuindersma and Spronk: Time to Tailor the One-Size-Fits-All Approach?** *American journal of respiratory and critical care medicine*

  Furfaro, D. M., Sinha, P., Calfee, C. S., Brodie, D., O'Donnell, M. R.

  2022; 205 (4): 480-481

- **Cutting the Gordian knot of heterogeneity: Can integrated systems biology modelling rescue critical care syndromes?** *EBioMedicine*

  Maddali, M. V., Sinha, P.

  2022; 77: 103884

- **Validation and utility of ARDS subphenotypes identified by machine-learning models using clinical data: an observational, multicohort, retrospective analysis.** *The Lancet. Respiratory medicine*

  Maddali, M. V., Churpek, M., Pham, T., Rezoagli, E., Zhuo, H., Zhao, W., He, J., Delucchi, K. L., Wang, C., Wickersham, N., McNeil, J. B., Jauregui, A., Ke, et al

  1800

- **Latent Class Analysis Reveals COVID-19-related Acute Respiratory Distress Syndrome Subgroups with Differential Responses to Corticosteroids** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*

  Sinha, P., Furfaro, D., Cummings, M. J., Abrams, D., Delucchi, K., Maddali, M., He, J., Thompson, A., Murn, M., Fountain, J., Rosen, A., Robbins-Juarez, S. Y., Adan, et al

  2021; 204 (11): 1274-1285

- **Comparison of machine learning clustering algorithms for detecting heterogeneity of treatment effect in acute respiratory distress syndrome: A secondary analysis of three randomised controlled trials** *EBIOMEDICINE*

  Sinha, P., Spicer, A., Delucchi, K. L., McAuley, D. F., Calfee, C. S., Churpek, M. M.

  2021; 74: 103697

- **Longitudinal respiratory subphenotypes in patients with COVID-19-related acute respiratory distress syndrome: results from three observational cohorts** *LANCET RESPIRATORY MEDICINE*

  Bos, L. D. J., Sjoding, M., Sinha, P., Bhavani, S., Lyons, P. G., Bewley, A. F., Botta, M., Tsonas, A. M., Neto, A., Schultz, M. J., Dickson, R. P., Paulus, F.

  2021; 9 (12): 1377-1386

- **A Research Agenda for Precision Medicine in Sepsis and Acute Respiratory Distress Syndrome An Official American Thoracic Society Research Statement** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*

  Shah, F., Meyer, N. J., Angus, D. C., Awdish, R., Azoulay, E., Calfee, C. S., Clermont, G., Gordon, A. C., Kwizera, A., Leligdowicz, A., Marshall, J. C., Mikacenic, C., Sinha, et al

  2021; 204 (8): 891-901

- **Pathophysiology of the Acute Respiratory Distress Syndrome: Insights from Clinical Studies** *CRITICAL CARE CLINICS*

  Sinha, P., Bos, L. D.

  2021; 37 (4): 795-815

- **Tracheal aspirate RNA sequencing identifies distinct immunological features of COVID-19 ARDS.** *Nature communications*

  Sarma, A., Christenson, S. A., Byrne, A., Mick, E., Pisco, A. O., DeVoe, C., Deiss, T., Ghale, R., Zha, B. S., Tsitsiklis, A., Jauregui, A., Moazed, F., Detweiler, et al

  2021; 12 (1): 5152

- **Therapeutic Anticoagulation with Heparin in Critically Ill Patients with Covid-19.** *The New England journal of medicine*

REMAP-CAP Investigators, ACTIV-4a Investigators, ATTACC Investigators, Goligher, E. C., Bradbury, C. A., McVerry, B. J., Lawler, P. R., Berger, J. S., Gong, M. N., Carrier, M., Reynolds, H. R., Kumar, A., Turgeon, A. F., Kornblith, L. Z., et al

2021

- **Therapeutic Anticoagulation with Heparin in Noncritically Ill Patients with Covid-19.** *The New England journal of medicine*

  ATTACC Investigators, ACTIV-4a Investigators, REMAP-CAP Investigators, Lawler, P. R., Goligher, E. C., Berger, J. S., Neal, M. D., McVerry, B. J., Nicolau, J. C., Gong, M. N., Carrier, M., Rosenson, R. S., Reynolds, H. R., Turgeon, A. F., et al

  2021

- **Plasma Metabolites in Early Sepsis Identify Distinct Clusters Defined by Plasma Lipids.** *Critical care explorations*

  Rogers, A. J., Leligdowicz, A., Contrepois, K., Jauregui, A., Vessel, K., Deiss, T. J., Belzer, A., Liu, T., Lippi, M., Ke, S., Ross, E., Zhou, H., Hendrickson, et al

  2021; 3 (8): e0478

- **Latent class analysis-derived subphenotypes are generalisable to observational cohorts of acute respiratory distress syndrome: a prospective study** *THORAX*

  Sinha, P., Delucchi, K. L., Chen, Y., Zhuo, H., Abbott, J., Wang, C., Wickersham, N., McNeil, J., Jauregui, A., Ke, S., Vessel, K., Gomez, A., Hendrickson, et al

  2022; 77 (1): 13-21

- **Genome-wide association studies in ARDS: SNPing the tangled web of heterogeneity.** *Intensive care medicine*

  Clohisey, S., Sinha, P.

  2021; 47 (7): 782-785

- **Genome-wide association studies in ARDS: SNPing the tangled web of heterogeneity** *INTENSIVE CARE MEDICINE*

  Clohisey, S., Sinha, P.

  2021; 47 (7): 782-785

- **Six-month and 12-month patient outcomes based on inflammatory subphenotypes in sepsis-associated ARDS: secondary analysis of SAILS-ALTOS trial** *THORAX*

  Hashem, M. D., Hopkins, R. O., Colantuoni, E., Dinglas, V. D., Sinha, P., Aronson Friedman, L., Morris, P. E., Jackson, J. C., Hough, C. L., Calfee, C. S., Needham, D. M.

  2022; 77 (1): 22-30

- **Immunotherapy in COVID-19: why, who, and when?** *LANCET RESPIRATORY MEDICINE*

  Sinha, P., Calfee, C. S.

  2021; 9 (6): 549-551

- **A neutrophil subset defined by intracellular olfactomedin 4 is associated with mortality in sepsis** *AMERICAN JOURNAL OF PHYSIOLOGY-LUNG CELLULAR AND MOLECULAR PHYSIOLOGY*

  Kangelaris, K. N., Clemens, R., Fang, X., Jauregui, A., Liu, T., Vessel, K., Deiss, T., Sinha, P., Leligdowicz, A., Liu, K. D., Zhuo, H., Alder, M. N., Wong, et al

  2021; 320 (5): L892-L902

- **The Clinical Course of Coronavirus Disease 2019 in a US Hospital System: A Multistate Analysis** *AMERICAN JOURNAL OF EPIDEMIOLOGY*

  Mody, A., Lyons, P. G., Guillamet, C., Michelson, A., Yu, S., Namwase, A., Sinha, P., Powderly, W. G., Woeltje, K., Geng, E. H.

  2021; 190 (4): 539-552

- **Biological Mechanisms of Cognitive and Physical Impairments after Critical Care Rethinking the Inflammatory Model?** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*

  Parker, A. M., Sinha, P., Needham, D. M.

  2021; 203 (6): 665-667

- **Assessing the importance of interleukin-6 in COVID-19 Reply** *LANCET RESPIRATORY MEDICINE*

  Leisman, D. E., Ronner, L., Pinotti, R., Taylor, M. D., Sinha, P., Calfee, C. S., Hirayama, A. V., Mastroianni, F., Turtle, C. J., Harhay, M. O., Legrand, M., Deutschman, C. S.

  2021; 9 (2): E14-E15

- **COVID-19 ARDS is characterized by a dysregulated host response that differs from cytokine storm and is modified by dexamethasone.** *Research square*

  Sarma, A., Christenson, S., Mick, E., Deiss, T., DeVoe, C., Pisco, A., Ghale, R., Jauregui, A., Byrne, A., Moazed, F., Spottiswoode, N., Sinha, P., Zha, et al

2021

- **Cytokine elevation in severe and critical COVID-19: a rapid systematic review, meta-analysis, and comparison with other inflammatory syndromes** *LANCET RESPIRATORY MEDICINE*
  Leisman, D. E., Ronner, L., Pinotti, R., Taylor, M. D., Sinha, P., Calfee, C. S., Hirayama, A. V., Mastroiani, F., Turtle, C. J., Harhay, M. O., Legrand, M., Deutschman, C. S.
  2020; 8 (12): 1233-1244

- **Phenotypes and personalized medicine in the acute respiratory distress syndrome** *INTENSIVE CARE MEDICINE*
  Matthay, M. A., Arabi, Y. M., Siegel, E. R., Ware, L. B., Bos, L. D. J., Sinha, P., Beitler, J. R., Wick, K. D., Curley, M. A. Q., Constantin, J., Levitt, J. E., Calfee, C. S.
  2020: 2136–52

- **Current and evolving standards of care for patients with ARDS** *INTENSIVE CARE MEDICINE*
  Menk, M., Estenssoro, E., Sahetya, S. K., Neto, A., Sinha, P., Slutsky, A. S., Summers, C., Yoshida, T., Bein, T., Ferguson, N. D.
  2020; 46 (12): 2157-2167