Stanford

Hayley Gans

Clinical Professor, Pediatrics - Infectious Diseases

CLINICAL OFFICES

- **Pediatric Infectious Disease**

  730 Welch Rd

  MC 5884 2nd Fl

  Palo Alto, CA 94304

  Tel (650) 721-5805 **Fax** (650) 725-8040

ACADEMIC CONTACT INFORMATION

- **Alternate Contact**

  Linda Lambert

  Email llambert@stanford.edu

Bio

CLINICAL FOCUS

- Infectious Diseases, Pediatric
- Pediatric Infectious Diseases

ACADEMIC APPOINTMENTS

- Clinical Professor, Pediatrics - Infectious Diseases
- Member, Maternal & Child Health Research Institute (MCHRI)

ADMINISTRATIVE APPOINTMENTS

- Fellowship Program Director, Pediatric Infectious Diseases, (2006-2017)
- Co-director, Pediatric Infectious Diseases Program for Immunocompromised Hosts, Children's Hospital at Stanford, (2013- present)
- Associate Fellowship Director, Pediatric Infectious Diseases, Stanford University Medical Center, (2017- present)
- Director, Fellowship Education, Department of Pediatrics, Stanford University Medical Center, (2017- present)

HONORS AND AWARDS

- Faculty Fellows Leader Program, Stanford University Medical Center (2011)
- Certificate of Achievement, Stanford clinical Effectiveness Leadership Training, Stanford University School of Medicine (2017)
- Fuji Apple Award in Recognition of Contribution to Fellowship Education and Mentorship, Department of Pediatrics, Stanford University Medical Center (2018)

PROFESSIONAL EDUCATION

- Medical Education: State University of New York Syracuse Medical School Registrar (1991) NY
- Board Certification: Pediatric Infectious Diseases, American Board of Pediatrics (1999)
- Fellowship: Stanford University School of Medicine Registrar (1998) CA
- Residency: Stanford University Medical Center (1994) CA
- Internship: Stanford University Medical Center (1992) CA

- M.D., SUNY at Syracuse , Medicine (1991)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

The focus of my laboratory is defining the immune response to viral vaccines evaluating the ontogeny of responses in infants and limitations in immunocompromised hosts. We have studied the memory effector T cells response in infants given an early two-dose measles vaccine regimen, measuring CD4+, CD4+CD45RO+ and CD4+CD45RO+CCR7-T cells that produce IFN#;. We have also analyzed key markers of activation, using cell surface markers CD69 and CD40-ligand. In addition, we have studied innate immunity and the interactions with the adaptive immune system. We have measured dendritic cell and monocyte populations and function in infants and children and the effects on measles-specific CD4+ T cell responses. These analyses have also been applied to both term and preterm infants receiving polio vaccine, and children receiving varicella vaccination. Our findings have revealed relative limitations in both the innate and adaptive immune system of healthy infants and children as compared with adults. Currently, we are investigating mechanisms responsible for these restrictions. We are also examining the acquisition and persistence of viral immunity in two immunocompromised states, HIV infection and transplantation. The goals of these studies are to define immune profiles in populations where obstacles to vaccination exist to offer insights for the development of novel vaccine strategies.

In my role as Co-director of the Pediatric Infectious Diseases Program for Immunocompromised Hosts I am involved with research related to these populations, including outcome studies, epidemiologic studies focusing on respiratory illness in solid organ transplant, fever and neutropenia in Oncology, and risk factors for Post-transplant Lymphoproliferative Disease and cytomegalovirus disease in transplant recipients. In addition, we are studying the efficacy of vaccines and prophylactic measures, such as synagis, in these populations.

CLINICAL TRIALS

- Ontogeny of Measles Immunity in Infants, Recruiting

Teaching

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Infectious Diseases (Fellowship Program)

Publications

PUBLICATIONS

- **Loss of passively acquired maternal antibodies in highly vaccinated populations: an emerging need to define the ontogeny of infant immune responses.** *journal of infectious diseases*
  Gans, H. A., Maldonado, Y. A.
  2013; 208 (1): 1-3

- **The status of live viral vaccination in early life.** *Vaccine*
  Gans, H. A.
  2013; 31 (21): 2531-2537

- **Measles humoral and cell-mediated immunity in children aged 5-10 years after primary measles immunization administered at 6 or 9 months of age.** *journal of infectious diseases*
  Gans, H. A., Yasukawa, L. L., Sung, P., Sullivan, B., Dehovitz, R., Audet, S., Beeler, J., Arvin, A. M.
  2013; 207 (4): 574-582

- **IMP-Producing Carbapenem-Resistant Klebsiella pneumoniae in the United States** *JOURNAL OF CLINICAL MICROBIOLOGY*
  Limbago, B. M., Rasheed, J. K., Anderson, K. F., Zhu, W., Kitchel, B., Watz, N., Munro, S., Gans, H., Banaei, N., Kallen, A. J.
  2011; 49 (12): 4239-4245

- **Challenges in infant immunity: implications for responses to infection and vaccines** *NATURE IMMUNOLOGY*
  PrabhuDas, M., Adkins, B., Gans, H., King, C., Levy, O., Ramilo, O., Siegrist, C.

2011; 12 (3): 189-194

- **Preterm Infants' T Cell Responses to Inactivated Poliovirus Vaccine** *JOURNAL OF INFECTIOUS DISEASES*
  Klein, N. P., Gans, H. A., Sung, P., Yasukawa, L. L., Johnson, J., Sarafanov, A., Chumakov, K., Hansen, J., Black, S., Dekker, C. L.
  2010; 201 (2): 214-222

- **Age-Related Increase in the Frequency of CD4(+) T Cells That Produce Interferon-gamma in Response to Staphylococcal Enterotoxin B during Childhood** *JOURNAL OF INFECTIOUS DISEASES*
  Hanna-Wakim, R., Yasukawa, L. L., Sung, P., Fang, M., Sullivan, B., Rinki, M., Dehovitz, R., Arvin, A. M., Gans, H. A.
  2009; 200 (12): 1921-1927

- **Immune responses to mumps vaccine in adults who were vaccinated in childhood** *Annual Meeting of the Pediatric-Academic-Societies/Society-of-Pediatric-Research*
  Hanna-Wakim, R., Yasukawa, L. L., Sung, P., Arvin, A. M., Gans, H. A.
  UNIV CHICAGO PRESS.2008: 1669–75

- **Effects of interleukin-12 and interleukin-15 on measles-specific T-cell responses in vaccinated infants** *VIRAL IMMUNOLOGY*
  Gans, H. A., Yasukawa, L. L., Zhang, C. Z., Wakim, R. H., Rinki, M., Dehovitz, R., Arvin, A. M.
  2008; 21 (2): 163-172

- **Primary vaccine failure after 1 dose of varicella vaccine in healthy children** *44th Annual Meeting of the Infectious-Diseases-Society-of-America*
  Michalik, D. E., Steinberg, S. P., LaRussa, P. S., Edwards, K. M., Wright, P. F., Arvin, A. M., Gans, H. A., Gershon, A. A.
  UNIV CHICAGO PRESS.2008: 944–49

- **EOSINOPHILIC MENINGOENCEPHALITIS: PSYCHIATRIC PRESENTATION AND TREATMENT** *INTERNATIONAL JOURNAL OF PSYCHIATRY IN MEDICINE*
  Hong, D. S., Bernstein, M., Smith, C., Gans, H., Shaw, R. J.
  2008; 38 (3): 287-295

- **Age-dependent differences in IgG isotype and avidity induced by measles vaccine received during the first year of life** *JOURNAL OF INFECTIOUS DISEASES*
  Nair, N., Gans, H., Lew-Yasukawa, L., Long-Wagar, A. C., Arvin, A., Griffin, D. E.
  2007; 196 (9): 1339-1345

- **Immunogenicity of aerosol measles vaccine given as the primary measles immunization to nine-month-old Mexican children** *42nd Annual Meeting of the Infectious-Diseases-Society-of-America*
  Wong-Chew, R. M., Islas-Romero, R., Garcia-Garcia, M. D., Beeler, J. A., Audet, S., Santos-Preciado, J. I., Gans, H., Lew-Yasukawa, L., Maldonado, Y. A., Arvin, A. M., Valdespino-Gomez, J. L.
  ELSEVIER SCI LTD.2006: 683–90

- **Humoral and cell-mediated immune responses to an early 2-dose measles vaccination regimen in the United States** *41st Annual Meeting of the Infectious-Diseases-Society-of-America*
  Gans, H. A., Yasukawa, L. L., Alderson, A., Rinki, M., DeHovitz, R., Beeler, J., Audet, S., Maldonado, Y., Arvin, A. M.
  UNIV CHICAGO PRESS.2004: 83–90

- **T cell immunity to measles viral proteins in infants and adults after measles immunization** *VIRAL IMMUNOLOGY*
  Gans, H. A., Yasukawa, L. L., Alderson, A., Rinki, M., DeHovitz, R., Maldonado, Y., Arvin, A. M.
  2004; 17 (2): 298-307

- **Induction of cellular and humoral immunity after aerosol or subcutaneous administration of Edmonston-Zagreb measles vaccine as a primary dose to 12-month-old children** *JOURNAL OF INFECTIOUS DISEASES*
  Wong-Chew, R. M., Islas-Romero, R., Garcia-Garcia, M. D., Beeler, J. A., Audet, S., Santos-Preciado, J. I., Gans, H., Lew-Yasukawa, L., Maldonado, Y. A., Arvin, A. M., Valdespino-Gomez, J. L.
  2004; 189 (2): 254-257

- **Measles and mumps vaccination as a model to investigate the developing immune system: passive and active immunity during the first year of life** *International Symposium on Protection of Newborns through Maternal Immunization*
  Gans, H., DeHovitz, R., Forghani, B., Beeler, J., Maldonado, Y., Arvin, A. M.
  ELSEVIER SCI LTD.2003: 3398–3405

- **Jarisch-Herxheimer reaction associated with ciprofloxacin administration for tick-borne relapsing fever** *PEDIATRIC INFECTIOUS DISEASE JOURNAL*
  Webster, G., Schiffman, J. D., Dosanjh, A. S., Amieva, M. R., Gans, H. A., Sectish, T. C.

2002; 21 (6): 571-573

- **Immune responses to measles and mumps vaccination of infants at 6, 9, and 12 months** *38th Annual Meeting of the Infectious-Diseases-Society-of-America*
  Gans, H., Yasukawa, L., Rinki, M., DeHovitz, R., Forghani, B., Beeler, J., Audet, S., Maldonado, Y., Arvin, A. M.
  UNIV CHICAGO PRESS.2001: 817–26

- **Quanitation of CD4+responder T cell frequencies to measles in vaccinated infants and adults**
  Gans, H. A., Alderson, A., Lew-Yasukawa, L., Rinki, M., DeHovitz, R., Arvin, A. M.
  OXFORD UNIV PRESS INC.2001: 1152–52

- **Developmental maturation of the immune response to measles and mumps live viral vaccines.**
  Gans, H. A., Maldonado, Y., Yasukawa, L. L., Beeler, J., Audet, S., Forghani, B., Rinki, M. M., DeHovitz, R., Hammer, L., Arvin, A. M.
  OXFORD UNIV PRESS INC.2000: 223–23

- **Intravenous ribavirin therapy for adenovirus pneumonia** *PEDIATRIC PULMONOLOGY*
  Shetty, A. K., Gans, H. A., So, S., Millan, M. T., Arvin, A. M., Gutierrez, K. M.
  2000; 29 (1): 69-73

- **IL-12, IFN-gamma, and T cell proliferation to measles in immunized infants** *JOURNAL OF IMMUNOLOGY*
  Gans, H. A., Maldonado, Y., Yasukawa, L. L., Beeler, J., Audet, S., Rinki, M. M., DeHovitz, R., Arvin, A. M.
  1999; 162 (9): 5569-5575

- **Immune responses of 6, 9 and 12 month old infants immunized with measles or mumps vaccine and the effects of passive antibodies on these responses**
  Gans, H. A., Lew-Yasukawa, L., Beeler, J., DeHovitz, R., Maldonado, Y., Arvin, A. M.
  NATURE PUBLISHING GROUP.1999: 161A–161A

- **Deficiency of the humoral immune response to measles vaccine in infants immunized at age 6 months** *JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*
  Gans, H. A., Arvin, A. M., Galinus, J., Logan, L., DeHovitz, R., Maldonado, Y.
  1998; 280 (6): 527-532

- **Comparison of T-cell responses to measles antigen in infants immunized at 6, 9, and 12 months of age.**
  Gans, H., Galinus, J., DeHovitz, R., Arvin, A., Maldonado, Y.
  OXFORD UNIV PRESS INC.1996: 269–69