

NANOVAX

2025 CONFERENCE

Next Generation Countermeasures for Emerging and Re-Emerging Diseases

April 2-3, 2025
Gateway Hotel & Conference Center



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About this Conference

This event will bring together experts from all corners of vaccine and therapeutic research to advance promising and robust next-generation nanovaccines and nanotherapeutics through regulatory approvals and to clinical trials. The program will emphasize a transdisciplinary approach to transform the design and manufacturing of nanovaccines and nanotherapeutics that integrates nanotechnology, materials science, immunology, oncology, neuroscience, microbiology, clinical science, and social science.

Conference Policy

If you witness or are subject to any unwanted behavior, immediately report it to the Iowa State University system by submitting a confidential report of discrimination, harassment, retaliation, or interpersonal violence to the Office of Equal Opportunity at Iowa State University (<https://cm.maxient.com/reporting.php?iowastateuniv>).

Reporting can be done via email, phone call, or in person. Reporting should not be done over social media.

2025 Scientific Planning Committee

Anne Bronikowski
Michigan State University

Kenneth Carson
Southwest Research Institute

Gabriel Cutshaw
Iowa State University

Maneesh Jain
University of Nebraska Medical Center

Payton Kahl
University of Iowa

Sean Kelly
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Molly Kozminsky
Iowa State University

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Kevin Legge
University of Iowa

Jodi McGill
Iowa State University

Inna Ovsyannikova
Mayo Clinic

Christine Petersen
The Ohio State University

Michael Roof
Iowa State University

Kathleen Ross
Iowa State University

Daniela Sanchez
Iowa State University

Timothy Sullivan
Zeteo Biomedical

Conference Facilities

Gateway Hotel & Conference Center

2100 Green Hills Dr, Ames, IA 50014

The main program of the Nanovax Conference will be held at the Gateway Hotel and Conference Center. Hotel accommodation is on site for conference attendees. Transportation from the facility to other conference activities will be provided.



ISU Economic Development Core Facility

1805 Collaboration Pl, Ames, IA 50010

The ISU Research Park includes a two-story, 40,000 sq.ft. innovative community and economic incubator that aims to nurture business development among six previously separate research park business units comprised of industry professionals and entrepreneurs. Join us on April 2 for a networking hour following the Nanovax Program. Transportation will be provided to the venue, but free parking is also available on site. Complimentary appetizers and craft soda drinks provided.



Keynote Speakers

Opening Speakers



Mike Naig
Iowa Secretary of
Agriculture



Jason Keith
Provost, Iowa State
University

Keynote Presenters



Richard Webby
Director, World
Health
Organization
Collaborating
Centre for Studies
on the Ecology of
Influenza in
Animals and Birds,
St. Jude Children's
Research Hospital

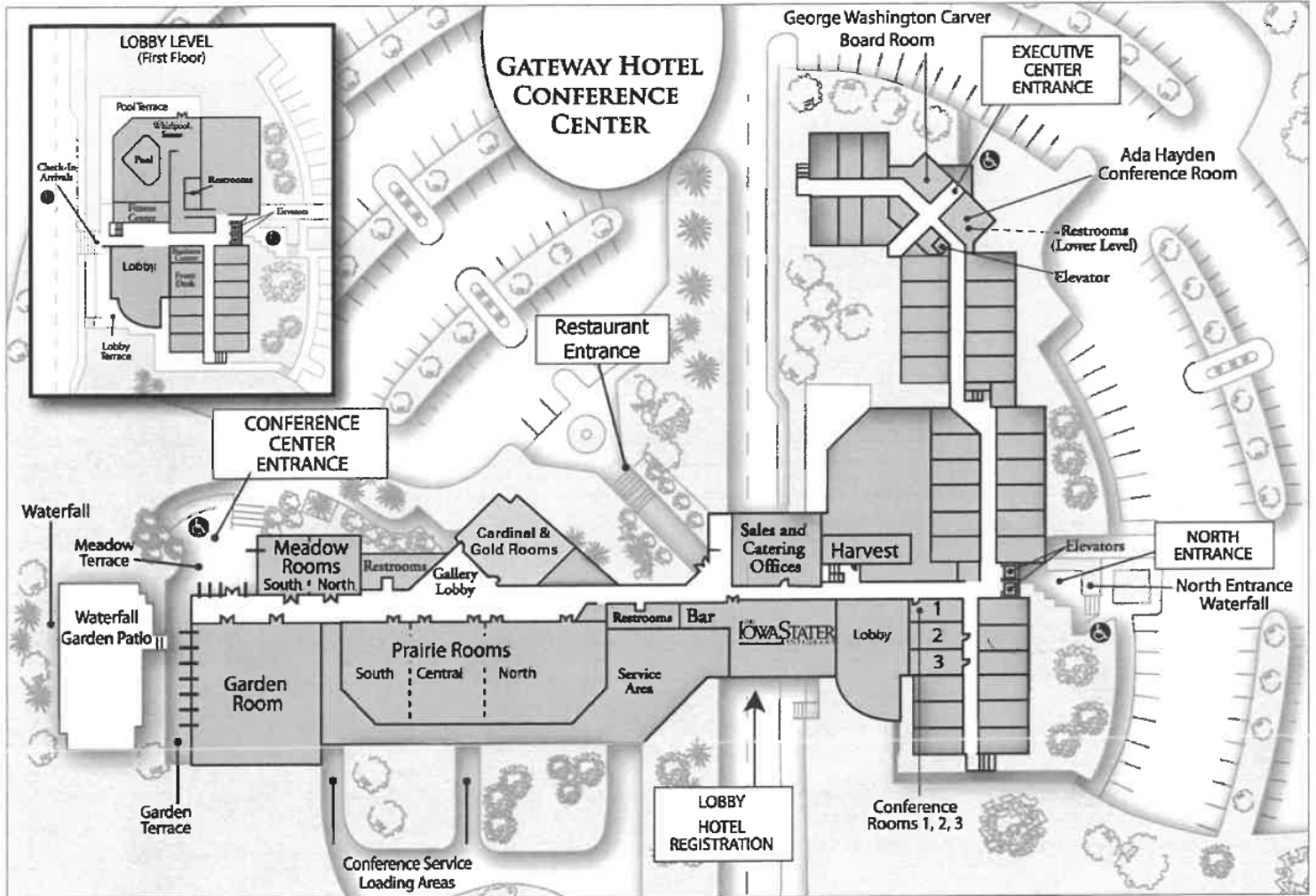


Amy Baker
Research
Veterinary Medical
Officer,
USDA National
Animal Disease
Center



Tyler Holck
Veterinary Consultant,
Feed His People LLC

Facility Map



Posters

Location and presenting authors - Prairie South Room

1	Image captioning using deep learning Chinrasu S, Karpagam Academy of Higher Education	11	The effect of electrical stimulation on adult Hippocampal Progenitor Cells Catherine Fonder, Iowa State University
2	Monitoring response to cobminatorial immunotherapies with PET-Raman multimodal gold nanostars Gabriel Cutshaw, Iowa State University	12	Evaluating the efficacy of an Influenza H5N1 nanoparticle based vaccine in inducing protective immune responses Payton Kahl, University of Iowa
3	Biodegradable particles for controlled antigen delivery Adam Salem, University of Iowa	13	Differentiation and proliferation of AHPC Neurospheres plated on gold substrates subjected to electric stimulation Nesreen Sedeek, Iowa State University
4	In Vitro Pancreatic Tumor Microenvironments using DNA-Directed Patterning Lily Towery, Iowa State University	14	Nanomechanical and cellular responses of adult Hippocampal Progenitor Cells to blast-induced shockwave exposure Nabila Masud, Iowa State University
5	Using Polycaprolactone (PCL) Scaffold as a tool to investigate Immunosuppression in diseases Yuwei Zhang, Iowa State University	15	The invisible risk of ultrafine particle from wildland-urban interface fires: A growing challenge and hidden threat for humanity Md Jalal Uddin Rumi, Iowa State University
6	Retinal Progenitor Cell Differentiation by Electrical Stimulation on Microcircuits Austin Sympson, Iowa State University	16	Decoding firefighter PPE contamination: characterization and decontamination insights from lab-simulated smoke exposure Md Jakir Hossain, Iowa State University
7	The associations between B Cell Peroxisome Function and Fatigue and Depression in Long COVID: A preliminary analysis Zoe Sirotiak, Iowa State University	17	Engineering a long-lasting immune interface: a vaccine implant for sustained antigen release Nicholas Bockenstedt, Iowa State University
8	Use of VPEAR for single dose vaccination in sheep for Haemochus controtus Jennifer Wilson-Welder, USDA ARS	18	Impact of age on human dendritic cell metabolism in response to vaccine adjuvants Promit Sinha Roy, Iowa State University
9	Novel biocide treatment of experimental digital dermatitis Jennifer Wilson-Welder, USDA ARS	19	Age-related differences in Dendritic Cell response to vaccine adjuvants Tyler Thompson, Iowa State University
10	Segment-specific enteroids from pig small intestine in matrigel and transwell inserts: Susceptibility to porcine epidemic diarrhea virus (PEDV) Lu Yen, Iowa State University		

April 2 - Day 1

Agenda

8:00	Registration opens
9:15	Opening Remarks Mike Naig, Iowa Secretary of Agriculture Prairie North/Central Room
9:45	Keynote Presentation: An udderly unexpected outbreak of Bovine Influenza Richard Webby, St. Jude Children's Research Hospital Prairie North/Central Room
10:45	Poster and Exhibit Hall Break Prairie South Room
11:15	Connect & Elevate: Networking and Mentorship Hour Prairie North/Central Room
12:00	Lunch/Poster and Exhibit Hall Break Prairie North/Central/South Room
1:00-2:30	Breakout Presentation Thematic Tracks <ul style="list-style-type: none">• Human Health• Animal Health• Emerging Disease Threats• Manufacturing, Development, and Distribution <p>(see next page)</p>
2:30	Poster and Exhibit Hall Break Prairie South Room
3:00	Off-Site Tours <i>Meet at the hotel lobby for bus transportation</i>
5:30	Evening Networking Reception at the ISU Research Park ISU Economic Development Core Facility, 1805 Collaboration Pl, Ames, IA 50010 Co-hosted by the Nanovaccine Institute and ISU Research Park <i>Appetizers and craft soda drinks provided.</i>

April 2 - Day 1 Thematic Breakout Sessions

	Prairie North/Central Room	Cardinal Room	Gold Room	South Meadow
	Human Health	Animal Health	Emerging Disease Threats	Manufacturing, Development, and Distribution
1:00	Regular Presentation: Next Generation Cell Therapy for Alzheimer's Disease Howard Gendelman, University of Nebraska Medical Center	Regular Presentation: Polyamhdride nanoparticles-based immunostimulants to prevent and reduce respiratory infections Jodi McGill, Iowa State University	Regular Presentation: The role of AI in conjunction with structural biology and rapid imaging to expedite disease surveillance and intervention in livestock Ratul Chowdhury, Iowa State University	Regular Presentation: Why is all large commercial scale LNP production done in confined jet mixers (flash nanoprecipitation (FNP))? Robert Prud'homme, Princeton University
1:35	Lightning Talk: Plasmodium parasitemia suppresses protective efficacy of the Ebola virus vaccine Jonah Elliff, University of Iowa	Lightning Talk: Human dimensions of livestock disease management: data from the Iowa Farm and Rural Life Poll Hanna Bates, Iowa State University	Lightning Talk: An adjuvanted DNA lipid nanoparticle vaccine against Avian Infectious Bronchitis virus Fakry Ramadan, University of Wisconsin-Madison	Lightning Talk: Intensified manufacturing technologies: Role in vaccine development and supply Kamesh Sirigireddy, Merck
1:55	Lightning Talk: Promising targeted therapy for Fuchs endothelial corneal dystrophy (FECD) assisted with cRGD conjugated ubiquinol loaded nanoparticles Apurva Dusane, University of Iowa	Lightning Talk: Shiga toxin-producing Escherichia coli-host interaction studies, using model systems, provide insights into new therapeutic options Indira Kudva, USDA ARS	Lightning Talk: Detection of SARS-CoV-2 virus in saliva using a flow-through packed bed microscale surface ion-conduction sensor Sanduni Devasinghe, Iowa State University	Lightning Talk: Human SigA functionalized nanoparticles as drug/vaccine delivery vehicles show superiority of delivery efficiency in in-vivo test platform Tianjian Tong, Iowa State University
2:15	Lightning Talk: Innovative low-cost hydrogels from polymeric nanocarriers containing gallium nitrate for enhanced Leishmaniasis treatment Victor De Albuquerque Wanderley Sales, Iowa State University	Lightning Talk: Partial spillover of personal COVID-19 vaccination decisions onto cattle vaccination practices: Evidence from a survey of South Dakota beef producers Filip Viskupic, Iowa State University	Lightning Talk: Evaluating the efficacy of an Influenza H5N1 nanoparticle based vaccine in inducing protective immune responses Payton Kahl, University of Iowa	Lightning Talk: H5N1 impacting the farm animal sector and how to leverage next generation vaccine technologies to deploy in response Lucas Huntimer, Genvax Technologies

April 3 - Day 2

Agenda

8:00	Opening Remarks Jason Keith, Provost, Iowa State University Prairie North/Central Room
8:15	Keynote Presentation: Research updates on highly pathogenic avian influenza in cattle and pigs at the USDA-ARS National Animal Disease Center Amy Baker, USDA National Animal Disease Center Prairie North/Central Room
9:20-10:20	Breakout Presentation Thematic Tracks <ul style="list-style-type: none">• Human Health• Emerging Disease Threats• Manufacturing, Development, and Distribution (see next page)
10:20	Poster and Exhibit Hall Break Prairie South Room
11:00	Workshop: "Win-Win" R&D Collaborations with the U.S. Government Jeremiah Kelly, Venable LLP Prairie North/Central Room
12:00	Animal Health: Past, Present, and Future Tyler Holck, Feed His People LLC <i>Brown bag lunch provided</i> Prairie North/Central Room
1:00	Poster Award Ceremony and Closing Remarks Prairie North/Central Room

	Prairie North/Central Room	Cardinal Room	Gold Room
	Human Health	Emerging Disease Threats	Manufacturing, Development, and Distribution
9:20	<p>Lightning Talk: High-resolution in vitro tumor microenvironments constructed using DNA-directed patterning Molly Kozminsky, Iowa State University</p>	<p>Regular Talk: Novel nanovaccines against emerging isolates of Avian Influenza Adel Talaat, University of Wisconsin Madison</p>	<p>Regular Talk: Robust prediction of enzyme variant kinetics with RealKcat Karuna Sajeevan, Iowa State University</p>
9:35	<p>Lightning Talk: Using Polycaprolactone (PCL) Scaffold as a tool to investigate immunosuppression in diseases Yuwei Zhang, Iowa State University</p>		
9:50	<p>Lightning Talk: Multiplexed tracking of immune response to combination immunotherapy with surface-enhanced Raman spectroscopy (SERS) using gold nanostars Siddhant Kothadiya, Iowa State University</p>	<p>Lightning Talk: Surface charge-based ion conduction sensor for bacterial pathogen detection and antimicrobial resistance testing Beatrice Berzina, Iowa State University</p>	<p>Lightning Talk: Polyhydride nanovaccine induces mucosal immunity and protects neonatal calves against BRSV Elizabeth Grego, Iowa State University</p>
10:05	<p>Lightning Talk: The paradox of gold-liposome nanoparticle hybrids: the location of gold drives cellular behavior Vandhana Kandavelkumar, Iowa State University</p>	<p>Lightning Talk: Equine Influenza antigen-based nanovaccine protects mice from homologous and heterosubtypic virus challenge Alaric Siddoway, Iowa State University</p>	<p>Lightning Talk: Scalable particle synthesis for next generation vaccines Sean Kelly, Iowa State University</p>



Thank you for attending.