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HONORING **NEBRASKA INNOVATORS, TECHNOLOGIES, DISCOVERIES & ENTREPRENEURS**

INNOVATION 2025 AWARDS

WEDNESDAY **OCTOBER 22**
SCOTT CONFERENCE CENTER
5:00 PM

INNOVATION 2025 AWARDS

MESSAGE FROM **MICHAEL DIXON**

On behalf of the University of Nebraska and the entire UNeMed team, welcome to the 2025 Research Innovation Awards, where we celebrate you—the inventors, researchers, partners, and entrepreneurs whose creativity, persistence, and drive make innovation and technology commercialization possible.

Turning those early sparks into real-world products is a challenging journey—and that's why UNeMed was founded 34 years ago. We exist to guide, protect, and promote your discoveries, helping them grow into technologies that can change the world.

This evening marks the high point of Innovation Week, as we recognize inventors who have disclosed new inventions, received U.S. patents, or achieved successful licenses. We will also honor an early-stage innovation with the **2025 Most Promising New Invention**, which may one day become the foundation of a new product or startup, like our **2025 Startup of the Year, RespirAI**.

We are proud to recognize the University of Nebraska's most prolific inventor, **Thanh Nguyen, PhD, MSN**, with the **Faculty Entrepreneur Award**. This year's **Emerging Inventor, Ashok Puri, MBBS, MS**, is being honored for his outstanding contributions to advancing new technologies.

Finally, the **Innovation Champion Award** will be presented to **Invest Nebraska**, recognizing the substantial support and investment they have contributed to our ecosystem over the past two decades.

To every innovator here tonight—thank you. Your work embodies the best of university innovation, and UNeMed is proud to stand beside you as your partner in turning ideas into impact.

Sincerely,

Michael Dixon, PhD
President and CEO, UNeMed

NEW INVENTION NOTIFICATION **CONTRIBUTORS**

Daniel Ackerman*
Tania Aguilera Pineda
Mabruka Alfaidi
Mohammad Uzair Ali
Sadie Allen
Cody Anderson*
Ian Andress
Josue Avecillas-Chasin
Krysta Baack
Aditya Bade
Janina Baranowska-Kortylewicz
Jared Baxter
Ahad Behboodi*
Shahnaz Benner*
Gregory Bennett
Luke Bergstrom*
John Bertoni*
Shaurav Bhattarai
Keshore Bidasee*
Katie Bieber
Samuel Bierner
Nicholas Borg
David Brett-Major*
Kolby Brink
Mara Jana Broadhurst*
Alex Brodersen
Liliana Bronner*
Bharatbhai Chaudhary
Bhavana Chhunchha
Ajaykumar Chittipolu
Jonathan Clayton
Martin Conda Sheridan
Kevin Crown
Richard (Beni) Csordas
Srijita Das
Dele Davies
Anastasia Desyatova
Soumya Sagar Dey
Dobromir Dotov*
Benson Edagwa*
Hossam Elaraky
Joel Elson
Amy Encinger
Daniel Firestone
Wesley Fisher
Charles Fisher
Emma Foster
Tracy Gady*
Julian Garcia
Jered Garrison
Flobater Gawargi*
Howard Gendelman*
Dylan George
Bill Glass
Stephen Gliske
Maurice Godfrey*
Jingxian Gu
Nicholas Guenzel
Ritika Gupta
Xiaoyu (George) Hao
Matthew Hastings
Hap Hausman*
Josh Havens
David Hefley
Breanna Hetland
Guoku Hu*
Zahid Iqbal
Jacques Izard
Majid Jadidi
Sophia Jensen
Perry Johnson
Anna Johnston*
Rana Kadry
Pramila Kalaga*
Marilena Kalaitzi Manifrenti
Alexey Kamenskiy*
Adam Karpf
Seung Kyeom Kim
David Kingston
Smitha Kizhake
Amritha Kizhake
Julian Klein
Brian Knarr*
Christopher Kovach
Ronald Krueger
Mohit Kumar
Siddhartha Kumar
Neha Kumari
James Lang*
James Lawler*

**Multiple*

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INNOVATION 2025 AWARDS

NEW INVENTION NOTIFICATION **CONTRIBUTORS**

Donghee Lee
McGuire Leiting
Aaron Likens
Yutong Liu*
Bethany Lowndes*
Jason MacTaggart*
Ram Mahato
Philippe Malcolm*
Callie Martin
Viktoriya Mashinson
Tess McKinney
Abraham Mechesso
Shaheed Merani
Shalmali Mirajkar
Vahid Mohammadi*
Aaron Mohs
Matthew Mormino*
R. Lee Mosley*
Mukul Mukherjee*
Lauren Musil
Ali Namvaran*
Susan Needham
Marie Neumann
Thanh Nguyen*
Heather Nichols
Casey Nugent
Edward O'Leary
Oluwatayo Olasunkanmi
David Oupicky
Sudipta Panja*
Song-Young Park*
Emily Pratt
Ashok Puri
Sajda Qureshi
Mahendran Ramasamy
Imran Rather*
Ashley Ravnholdt*
Prathap Reddy Mukthapuram
Tracie Reding
Ryan Riskowski
Katie Robbins
Marat Sadykov
Afshin Salehi
Yury Salkovskiy
Stephen Salzbrenner*
Derrick Samuelson
Joshua Santarpia*
S M Shatil Shahriar
Abhineet (Monti) Sharma
Alisha Sheffield
Olabisi Sheppard*
Kiana Sherkatsadi
Sangwon Shin*
Morgan Shradar
Kasturi Siddhanta
Aleem Siddique
Susmita Sil*
Princess Simeon
Dhirendra Singh
Simran Singh
Rahul Singh
Joseph Siu*
Matthew Sorensen
Shefali Srivastava
Samantha Stuart*
Daniel Surdell*
Denis Svechkarev
Tiffany Tanner
Olga Taraschenko
Paul Trippier*
Mariano Uberti
Pieter Van den Berghe*
James Vargo
Angela Vasa*
Mark Vazquez*
Daniel Villageliu
Suchita Vishwakarma
Michael Wadman*
Guangshun Wang*
Morrell Waters
Noah Wester*
James Willcockson
Jeremiah Wilt
Victor Winter*
Barbara Wolford
Ashley Wysong
Jingwei Xie*
Lirong Xu
Pravin Yeapuri*
Wesley Zeger
Weiwei Zhang
Xin Zhong

**Multiple*

INVENTION MILESTONES

The following lists denote the total number of new invention notifications individual inventors have submitted since UNeMed was created in 1991. Inventors with four or less inventions are not listed.

40+ Inventions

Thanh Nguyen.....91
Howard Gendelman 82
Michael Wadman.....78
Ben Boedeker 41

30-39 Inventions

Surinder Batra 39
Jingwei Xie 39
Sam Sanderson.....36
Dong Wang 32
Hani Haider 31
Mark Carlson.....30

20-29 Inventions

Guangshun Wang.....29
Brian Knarr 28
Thomas McDonald 27
Benson Edagwa 26
Jason Johanning 23
Janina Baranowska-Kortylewicz 22
Steven Hinrichs 22
Jason MacTaggart.....22
Amarnath Natarajan.....20
Wesley Zeger.....21

15-19 Inventions

Dmitry Oleynikov.....19
Nicholas Stergiou 18
R. Lee Mosley.....17
Thomas Porter.....16
Joseph Siu 16
Travis Vanderheyden.....16
Bin Duan 15
Corey Hopkins.....15
Jonathan Vennerstrom.....15
Hanjun Wang.....15
Jorge Zuniga 15

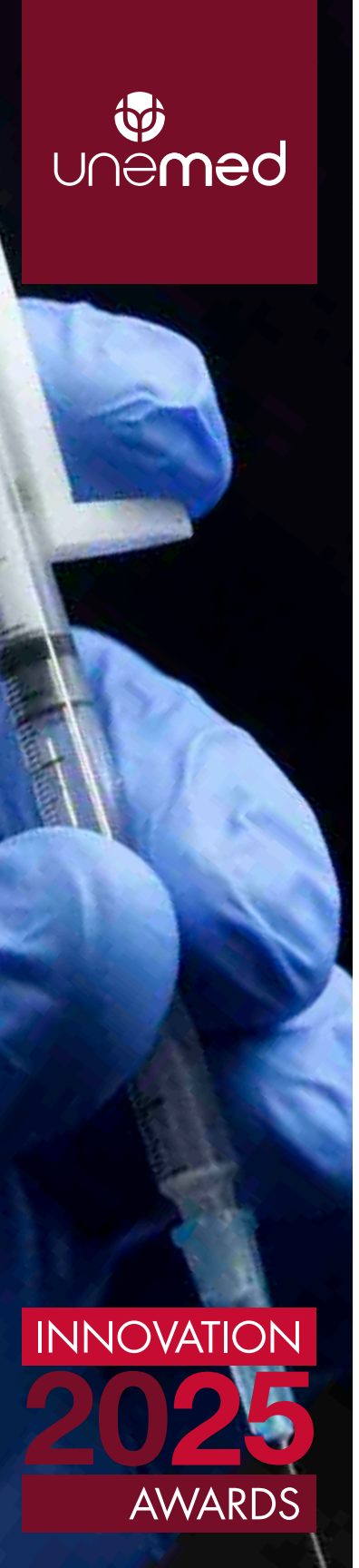
10-14 Inventions

Abraham Campos, 14; Tammy Kielian, 14; Bethany Lowndes, 14; Stephen Rennard, 14; Irving Zucker, 14; Gregory Bennett, 13; Mara Jana Broadhurst, 13; Alexey Kamenskiy, 13; Sara Myers, 13; Geoffrey Thiele, 13; Paul Trippier, 13; Joel Elson, 11; Michael (Tony) Hollingsworth, 11; Nicholas Markin, 11; Liliana Bronner, 10; Steven Carson, 10; Nora Chapman, 10; Christine Cutucache, 10; Punita Dhawan, 10; Maurice Godfrey, 10; Channabasavaiah Gurumurthy, 10; Steven Lisco, 10; Babu Padanilam, 10; David Oupicky, 10; Sudipta Panja, 10; Iraklis Pipinos, 10; Myron Toews, 10.

5-9 Inventions

Ercole Cavalieri, 9; Marius Florescu, 9; Rebekah Gundry, 9; Nicholas Heimann, 9; John Jackson, 9; Philippe Malcolm, 9; Aaron Mohs, 9; Milankumar Patel, 9; Richard Reinhardt, 9; Noah Wester, 9; Russell Buffum, 8; Ioannis Chatzizisis, 8; Jesse Cox, 8; Deepta Ghate, 8; Timothy Greiner, 8; Matthew Halanski, 8; James Hammel, 8; Kathleen Healey, 8; Zhenshan Jia, 8; Maneesh Jain, 8; Bhavesh Kevadiya, 8; Marilynn Larson, 8; Rongshi Li, 8; Prabagaran Narayanasamy, 8; Eleanor Rogan, 8; Amar Singh, 8; Byers Shaw Jr., 8; James Talmadge, 8; Siwei Zhao, 8; Jialin Zheng, 8; Iqbal Ahmad, 7; Daniel Anderson, 7; Walker Arce, 7; Hamid Band, 7; Bernard Baxter, 7; Kenneth Bayles, 7; Elizabeth Beam, 7; Michael Duryee, 7; Maximillian Kurz, 7; Tess McKinney, 7; Larisa Poluektova, 7; Stephen Salzbrenner, 7; Joshua Santarpia, 7; Wen Shi, 7; Rakesh Srivastava, 7; Pravin Yeapuri, 7; Cody Anderson, 6; Vimla Band, 6; Dhundy Bastola, 6; Jennifer Bredehoft, 6; David Brett-Major, 6; Keely Buesing, 6; Siddappa Byrareddy, 6; W. Scott Campbell, 6; Santhi Gorantla, 6; Neal Grandgenett, 6; Chittibabu (Babu) Guda, 6; Shantaram Joshi, 6; Peter Kador, 6; Sachin Kedar, 6; Jatinkumar Machhi, 6; Rodney Markin, 6; Mukul Mukherjee, 6; Gregory Oakley, 6; Prakash Radhakrishnan, 6; Andrew Schnaubelt, 6; Daniel Surdell, 6; Denis Svechkarev, 6; William Tapprich, 6; Joseph Vetro, 6; James Wahl, 6; Andrew Walski, 6; Feng Xie, 6; Aaron Barksdale, 5; James Campbell, 5; George Casale, 5; Prithviraj Dasgupta, 5; Yuxiang Dong, 5; Alex Dzewaltowski, 5; Kai Fu, 5; Flobater Gawargi, 5; James Gehringer, 5; Gregory Gordon, 5; Mahmudul Hasan, 5; Javeed Iqbal, 5; Peter Iwen, 5; Deepak Khazanchi, 5; Lynell Klassen, 5; James Lawler, 5; Yuri Lyubchenko, 5; Krishnaiah Maddeboina, 5; Joseph John McBride, 5; Carl Nelson, 5; Edward O'Leary, 5; Sheryl Paskevic, 5; Alicia Schiller, 5; Susmita Sil, 5; Dhirendra Singh, 5; Pankaj Singh, 5; Marcus Snow, 5; Lubaba Zaman, 5.

698 inventors with four or less.



TECHNOLOGIES LICENSED

Terrorism Prevention Chatbot	• Aiden Barger • Joel Elson • Erin Kearns • Jack Rygg
C5a Receptor Agonists for Infectious Disease	• Paul Davis • Tammy Kielian • Joseph Vetro
GLP-1 Agonist Prodrugs and Formulations	• Benson Edagwa
Caregiver Quality of Life Questionnaire	• Marie Neumann
Commingled Remains Analytics	• Sachin Pawaskar

INVENTORS WITH ISSUED PATENTS

Hamid Band
Vimla Band
Aiden Barger
Paul Deegan
Benson Edagwa*
Joel Elson
Daniel Firestone
Marius Florescu
Lie Gao
Andrew Gard
Howard Gendelman*
Hani Haider
Sarah Holstein
Alexey Kamenskiy*
Erin Kearns
Tammy Kielian
Michael Lankhorst
Steven Lisco
Jason MacTaggart*
Kaspars Maleckis
Bhopal Mohapatra
R. Lee Mosley
Jack Rygg
Molly Schieber
Joseph Siu
Matthew Storck
Daniel Surdell
William Thorell
Dong Wang
Gus Wang
Hanjun Wang
Jingwei Xie
Irving Zucker

PATENTS ISSUED

1. ''Distal Radius Plating System"
U.S. Patent No. 12,023,078 — issued July 2, 2024
- Daniel Firestone

2. "Chatbot for Reporting and Investigating Threats"
U.S. Patent No. 12,069,010 — issued August 20, 2024
- Joel Elson
- Doug Derrick
- Erin Kearns
- Jack Rygg
- Bradley Corwin
- Sam Schneider
- Aiden Barger

3. "Methods, Systems, and Devices Relating to Force Control Surgical Systems"
U.S. Patent No. 12,070,282 — issued August 27, 2024
- Shane Farritor
- Tom Frederick
- Joe Bartels
- Jacob Greenburg
- Kearney Lackas

**Multiple*

4. “Triazole Bisphosphonate Geranylgeranyl Diphosphate Synthase Inhibitors”
U.S. Patent No. 12,083,137 — issued September 10, 2024
- Sarah Holstein
- David Wiemer

5. “Computational Simulation Platform for Planning of Interventional Procedures”
U.S. Patent No. 12,096,986 — issued September 24, 2024
- Ioannis Chatzizisis

6. “Robotic Device with Compact Joint Design and Related Systems and Methods”
U.S. Patent No. 12,096,999 — issued September 24, 2024
- Tom Frederick
- Shane Farritor
- Eric Markvicka
- Dmitry Oleynikov

7. “Antimicrobial Compositions Containing a Synergistic Combination of Activated Creatinine and an Imidazole Antifungal Agent”
U.S. Patent No. 1,2102,617 — issued October 1, 2024
- Thomas McDonald
- Steven Tracy

8. “User-Paced Exercise Equipment”
U.S. Patent No. 12,102,879 — issued October 1, 2024
- Casey Wiens
- William Denton
- Molly Schieber

9. “Apparatus for Wrist and Catheter Stabilization”
U.S. Patent No. D1,046,125 — issued October 8, 2024
- Carlos Alvarez
- Daniel Surdell
- Andrew Gard
- William Thorell
- Landon Ehlers

10. “Gross Positioning Device and Related Systems and Methods”
U.S. Patent No. 12,109,079 — issued October 8, 2024
- Shane Farritor
- Mark Reichenbach

11. “Automatically Deployable Intravascular Device System”
U.S. Patent No. 12,138,186 — issued Novermber 12, 2024
- Jason MacTaggart
- Alexey Kamenskiy
- Blake Marmie

12. “Compositions and Methods for the Treatment of Peripheral Artery Disease and Cardiopulmonary Diseases”
U.S. Patent No. 12,138,274 — issued Novermber 12, 2024
- Hanjun Wang
- Dong Wang
- Michael Lankhorst
- Steven Lisco
- Irving Zucker
- Thomas Nicholas IV
- Lie Gao
- Juan Hong

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PATENTS ISSUED

13. "Camera Aided Simulator For Minimally Invasive Surgical Training"
U.S. Patent No. 12,154,455 — issued Novermber 26, 2024
- Ka-Chun Siu
- Carl Nelson
- Mohsen Zahiri
- Dmitry Oleynikov

14. "Methods and Compositions for Inhibiting Diseases of the Central Nervous System"
U.S. Patent No. 12,156,912 — issued December 3, 2024
- Howard Gendelman
- R. Lee Mosley

15. "Antiviral Prodrugs and Nanoformulations Thereof"
U.S. Patent No. 12,168,013 — issued December 17, 2024
- Howard Gendelman
- Benson Edagwa

16. "Single Site Robotic Device and Related Systems and Methods"
U.S. Patent No. 12,171,512 — issued December 24, 2024
- Tom Frederick
- Joe Bartels
- Eric Markvicka
- Shane Farritor
- Jack Mondry

17. "Anti-Microbial Peptides"
U.S. Patent No. 12,173,088 — issued December 24, 2024
- Guangshun Wang
- Biswajit Mishra
- Jayaram Lakshmaiah Narayana

18. "Surgical Devices and Methods"
U.S. Patent No. 12,178,465 — issued December 31, 2024
- Jason MacTaggart
- Alexey Kamenskiy
- Paul Deegan

19. "Lock-Block Shield Device"
U.S. Patent No. 12,178,623 — issued December 31, 2024
- Gregory Gordon

20. "CAR-T Cells Comprising Inactivated CBL and CBL-B Genes"
U.S. Patent No. 12,187,780 — issued January 7, 2025
- Hamid Band
- Vimla Band
- Bhopal Mohapatra
- Fany Iseka
- Matthew Storck

21. "On-Board Tool Tracking System and Methods of Computer Assisted Surgery"
U.S. Patent No. 12,232,828 — issued February 25, 2025
- Ibrahim Al-Shawi
- Hani Haider
- O. Andres Barrera

22. "Antiviral Prodrugs and Nanoformulations Thereof"
U.S. Patent No. 12,257,306 — issued March 25, 2025
- Howard Gendelman
- Benson Edagwa

23. "Nanofiber Segments and Methods of Use Thereof"
U.S. Patent No. 12,263,250 — issued April 1, 2025
- Jingwei Xie
- Sunil Kumar Boda

24. "Sheath"
U.S. Patent No. 12,268,827 — issued April 8, 2025
- Gregory Gordon

25. "Robotic Device with Compact Joint Design and an Additional Degree of Freedom and Related Systems and Methods"
U.S. Patent No. 12,274,517 — issued April 15, 2025
- Shane Farritor
- Lou Cubrich
- Tom Frederick

26. "Robotic Surgical Devices, Systems and Related Methods"
U.S. Patent No. 12,295,680 — issued May 13, 2025
- Shane Farritor
- Erik Mumm
- Jason Dumpert
- Philip Chu
- Yutaka Tsutano
- Nishant Kumar

27. "Gene Therapy for Juvenile Batten Disease"
U.S. Patent No. 12,297,447 — issued May 13, 2025
- Tammy Kielian
- Kevin Foust

28. "Single-Arm Robotic Device with Compact Joint Design and Related Systems and Methods"
U.S. Patent No. 12,303,221 — issued May 20, 2025
- Shane Farritor
- Joseph Palmowski

29. "Bypass Graft"
U.S. Patent No. 12,303,376 — issued May 20, 2025
- Jason MacTaggart
- Kaspars Maleckis
- Alexey Kamenskiy

30. "Platform Device and Method of Use to Assist in Anastomosis Formation"
U.S. Patent No. 12,310,590 — issued May 27, 2025
- Marius Florescu

31. "Quinoxaline Compounds and Uses Thereof"
U.S. Patent No. 12,312,334 — issued May 27, 2025
- Amarnath Natarajan

32. "Robotic Surgical Devices, Systems and Related Methods"
U.S. Patent No. 12,323,289 — issued June 3, 2025
- Shane Farritor
- Dmitry Oleynikov
- Tyler Wortman
- Kyle Strabala
- Ryan McCormick
- Amy Lehman
- Eric Markvicka

33. "Methods, Systems, and Devices Relating to Robotic Surgical Devices, End Effectors, and Controllers"
U.S. Patent No. 12,336,777 — issued June 24, 2025
- Shane Farritor
- Eric Markvicka
- Tom Frederick
- Jack Mondry
- Joe Bartels

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INNOVATION 2025 AWARDS

MOST PROMISING NEW INVENTION

Photo: UNMC

Edward O'Leary, MD, MBA
Associate Professor, Division of Cardiovascular Medicine, UNMC
Associate Program Director, Interventional Cardiology Fellowship, UNMC
Medical Director, Cardiovascular Catheterization Laboratory, UNMC

Cardiac Cath Lab Mentor

The Most Promising New Invention of 2025 is the Cardiac Cath Lab Mentor, an innovative medical education software program developed by Edward O'Leary, MD, MBA.

His interactive software program is designed to shorten the learning curve and help students learn how to interpret coronary angiograms, understand hemodynamics and better grasp general cardiac catheterization laboratory material.

Using real-time X-ray imaging, angiography shows physicians the best path to guide a wire or thin tube through a patient's blood vessels. The procedure can be used to diagnose things like coronary artery disease or to install a stent that opens a narrowed or blocked blood vessel.

But learning to navigate the three-dimensional twists and turns of normal human anatomy from a flat, two-dimensional video screen can take years to master. Dr. O'Leary's training platform, Aprendo Cardiovascular Solutions, promises to shorten that learning process while also making access to the training more widely available.

Aprendo's solution is a software-based platform built in collaboration with Omaha app developer Appksy.

Aprendo is revolutionizing medical education by leveraging the latest in portable 3D visualization technology and AI for highly specialized procedures like coronary angiography. Eventually, the Aprendo educational platform could be expanded to other areas such peripheral arteries or the brain.

Ashok Puri, MBBS, MS

Assistant Professor, Department of Ophthalmology and Visual Sciences & Center of Intelligent Healthcare, UNMC

Dr. Ashok Puri is the 2025 Emerging Inventor for his growing number of inventions in his portfolio and his entrepreneurial passion to commercialize them.

His research focuses on using artificial intelligence to develop tools that can enhance and improve several medical practices. Already, his work is showing promise for more accurately measuring and identifying diseases and biomarkers from medical images to create better diagnostics. In addition, his AI approaches are also helping build better designs for digital surgical planning tools and other applications.

Dr. Puri hit the ground running after joining UNMC in 2024, submitting four inventions in less than a year, resulting in four U.S. Patent applications.

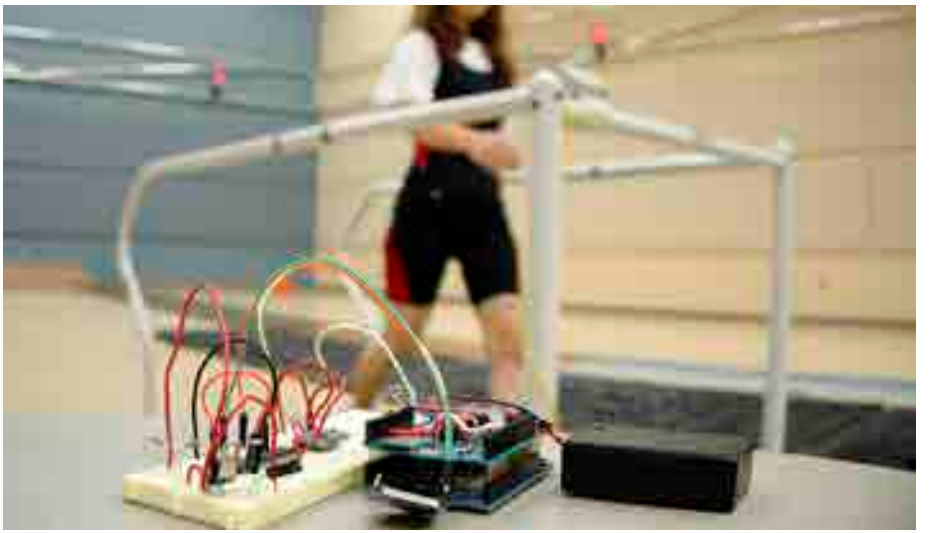
In collaboration with the Director of UNMC's Stanley M. Truhlsen Eye Institute, Ronald Krueger, MD, Dr. Puri formed Deep Health Diagnostics, LLC. The startup aims to commercialize Dr. Puri's technologies to improve the ability of non-expert clinicians in rural and remote areas to more accurately diagnose serious eye conditions. Deep Health Diagnostics also plans to expand its diagnostic abilities beyond retinal exams to include certain cancers and even infectious diseases like COVID.

Before joining UNMC, Dr. Puri practiced clinical ophthalmology in Jaipur, India, for more than 35 years. Dr. Puri received his MBBS degree from the Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Puducherry, India in 1982 and later his master's degree in ophthalmology from JIPMER in 1987. He later received his Diplomate of National Board from the National Board of Examinations in Medical Sciences in New Delhi in 1989. In 2021, he earned an advanced certificate in AI for Digital Health and Imaging from the Indian Institute of Science in Bengaluru.

In 2023, he received the best film award for "Future Forward – Artificial Intelligence Assisted Eye care," in general interest category at the Asia Pacific Association of Cataract and Refractive Surgeons conference (APACRS), along with best paper, "Refractive Error Prediction from Biometry." He also won first prize for his paper, "Retinal Image Classification and Visualization," at the Delhi Ophthalmological Society conference in 2022.

INNOVATION 2025 AWARDS

STARTUP OF THE YEAR



UNeMed Photo

One of the earliest prototypes for a device that could detect imminent exacerbations of chronic obstructive pulmonary disease, before any obvious symptoms are present. The product of a UNMC and UNO collaboration, it is the foundational technology of RespirAI.

RespirAI

The 2025 Startup of the Year, RespirAI, has secured more than $4.5 million in funding, including an award from the prestigious BIRD Foundation Grant, along with collaborator, Right at Home, which is headquartered in Omaha.

An eHealth Ventures portfolio company, RespirAI is currently raising a $5 million Series A round to complete FDA clinical trials and launch their first product.

RespirAI is tackling the critical problem of detecting COPD exacerbations, which is the sudden and potentially fatal flareup of symptoms.

COPD, short for chronic obstructive pulmonary disease, is a condition that slowly destroys a patient's lungs, eventually forcing them to live in constant breathlessness. It is the third-leading cause of death on the planet, and exacerbations are most often only treatable in intensive care units. Often, a patient's best chance at survival relies on how quickly they can get to a hospital.

The root cause of exacerbations remains a mystery, but a wearable device powered by RespirAI could finally provide COPD sufferers some advance warning that an exacerbation may be imminent.

The device measures the relationship between the rhythms of a patient's pulse rate and their breathing and walking patterns. A subtle, measurable change in those patterns helps determine the likelihood of an exacerbation.

The algorithms that power RespirAI's detection platform were created through a collaboration between UNO Biomechanics and UNMC Pulmonology.

The startup was initially created through an intellectual property license deal brokered by UNeMed. The original invention was a collaboration between UNMC's Stephen Rennard, MD, and UNO Biomechanics researcher, Jennifer Yentes, PhD.

UNeTech Institute, the University of Nebraska's startup incubator in Omaha, played a crucial role as well, funding a successful national study with an early prototype.

Thanh Nguyen, PhD, MSN, FNP-C
Assistant Professor, UNMC Department of Emergency Medicine

The most prolific inventor in UNeMed history—and most recent awardee of the University of Nebraska's prestigious President's Excellence Award for Faculty Intellectual Property Innovation and Commercialization—is UNeMed's newest Faculty Entrepreneur Award winner.

Since disclosing his first invention in October 2011, it seems Thanh Nguyen has done little else. At last count, the former emergency medicine nurse had 91 total invention submissions through the close of the last fiscal year. He holds two U.S. Patents and has another five pending.

His knack for finding clever solutions to interesting problems has led to the successful formation of two startup companies: University Medical Devices and HemaGlobal.

UNeMed's 2023 Startup of the Year, University Medical Devices is under the leadership of Nicholas Lorenzo, MD, who commercialized MicroWash, the first-ever nasal lavage specimen collection device for upper respiratory infection testing.

Dr. Nguyen and co-inventor, Michael Wadman, MD, created MicroWash in direct response to the uncomfortable and sometimes painful nasal swabs that gained notoriety during the COVID-19 pandemic. MicroWash is currently on the market, available for purchase and in clinical use today.

HemaGlobal, under the leadership of John Neubaum, is commercializing RapidSmear, the world's first truly portable blood smear preparation system. It is a portable device that allows clinical staff to quickly and easily prepare blood and bone marrow samples for microscopic examination.

The proper preparation of a blood slide for diagnostic testing is more complicated than it looks, and an improperly prepared slide could create potentially disastrous delays during a medical emergency. RapidSmear eliminates virtually all complications.

Dr. Nguyen's work also includes the founding of the Open-MediciNE initiative, which aims to provide low-cost, durable health technologies to underserved regions. A key element of the low-cost technologies is they are recreations of expensive medical equipment but re-designed to be built or improvised using commonly available items such as soda bottles and bicycle tire pumps.

INNOVATION 2025 AWARDS

INNOVATION CHAMPION

Photo: Invest Nebraska

Dan Hoffman
CEO, Invest Nebraska

Invest Nebraska

The 2025 selection of Invest Nebraska as UNeMed's Innovation Champion was an obvious choice for their tireless efforts in supporting and building the state's entrepreneurial ecosystem over the last quarter-century.

Established in 2001 and led by CEO Dan Hoffman, Invest Nebraska was born from a collaboration of the University of Nebraska, the state's Department of Economic Development and members of the private sector. The mission then was as it is today: Give a much-needed boost to all Nebraska entrepreneurs, collaborate with investors and help grow the state's economy.

As recently as 2011 Nebraska had ranked dead last for venture capital activity with zero dollars raised, but that began to change after Invest Nebraska championed the creation of the Business Innovation Act in 2011.

Since then, Invest Nebraska has deployed more than $63 million in to more than 225 Nebraska startups. Those investments were matched with an additional $235 million in private investment and those companies have gone on to raise more than a half-a-BILLION dollars of follow-on funding, lifting Nebraska from dead last to 29th place in less than a dozen years.

All told, Invest Nebraska portfolio companies have had a significant economic impact as they have helped create more than 1,330 jobs and $712 million in revenue.

Narrowing the focus to University innovations, Invest Nebraska has invested $4.6 million in 12 startups built around University of Nebraska technologies, half of them UNeMed startups. That support has led to more than $150 million in additional funding for UNMC and UNO startup companies, making Invest Nebraska a critically important ally and an easy choice as UNeMed's 2025 Innovation Champion.

INNOVATION WEEK HISTORY

Innovation Week dates back to 1998 when UNeMed and the Intellectual Property Office began hosting the Inventor's Recognition Reception, specifically tailored to honor UNMC researchers who had applied for or received patents in the previous year.

In 2007, UNMC restructured its technology transfer efforts into one organization, merging UNeMed with the Intellectual Property Office. UNeMed—under the leadership of then-CEO, James Linder, MD—transformed the Inventor's Recognition Reception into the Research Innovation Awards.

The awards ceremony was the pinnacle event in a week of activities that celebrated research and innovation at UNMC.

Innovation Week is now about far more than recognizing a handful of scientists with issued patents. It's a celebration that recognizes, rewards and encourages innovative thoughts and ideas, whether they come from the most seasoned and esteemed researcher or a first-year student who might see a better way. The program has grown into an event that brings together innovators and leadership from throughout the University of Nebraska System.

Dr. Xie

In addition to recognizing researchers who received a U.S. patent, submitted a new invention or had a technology licensed, UNeMed also presents emerging inventor and lifetime achievement awards. In 2008 UNeMed added the "Most Promising New Invention" as an annual award then, in 2013, presented for the first time, an "Innovator of the Year" Award. In 2018, UNeTech—the University's new incubator and accelerator program—presented the first Startup of the Year award. That same year, UNeMed and the University of Nebraska at Omaha formalized their relationship for UNO's deep roster of innovative researchers, faculty, staff and students.

Dr. Beam

And last year UNeMed added two more awards as a way to recognize the extraordinary efforts of inventors that build their own startup companies and the external partners who often toil in the shadows but are helping push University innovations to the market.

Breanna Hetland, PhD, was the first "Faculty Entrepreneur" award winner for her impressive drive in building and growing her startup, FamilyRoom.health. The first "Innovation Champion" award went to the Maverick Technology Venture Alliance, a student-led business strategy program that provides a wide range of essential services for fledgling startups.

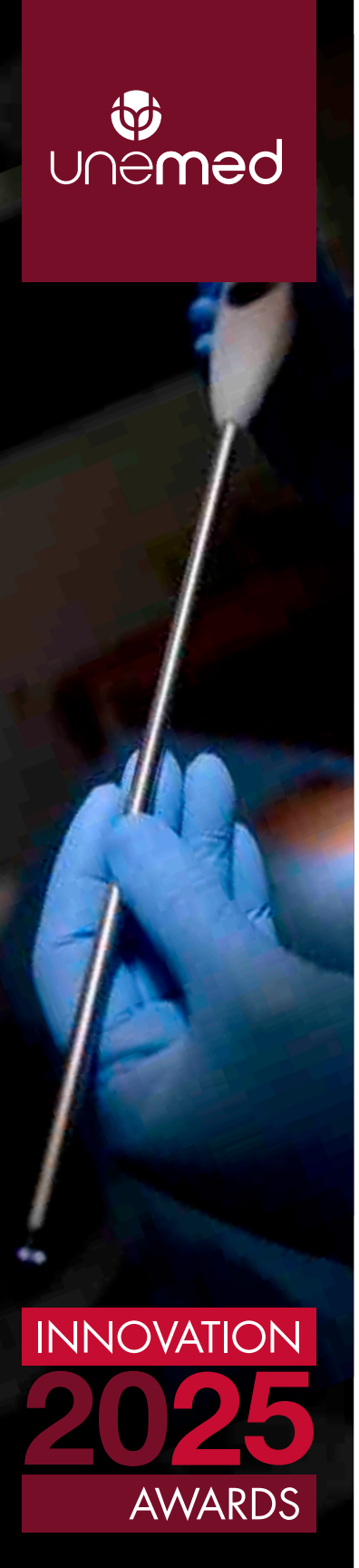
Dr. Hetland

Last year, the Most Promising New Invention was an important revision to powered air purifying respirators that has profound potential to improve the safety and performance of healthcare providers when wearing personal protective gear while treating patients with infectious diseases. The "Ruggedized Beam Helmet" was a collaboration between Elizabeth Beam, PhD, Sarah Dunsmore, PhD, Brianna Parr, Bethany Lowndes, PhD, Brian Knarr, PhD, and Andrew Walski.

The 2024 Startup of the Year award went to Carecubes, a company building portable and rapidly deployable negative pressure isolation units. The innovative system was developed and perfected by UNMC's world-renown infectious disease team and Otherlab in San Francisco.

Finally, UNeMed's 2024 Innovator of the Year was Jingwie Xie, PhD, in recognition of a multitude of inventions that have developed into an extensive portfolio of advanced nanofiber technologies.

His innovative nanofibers can be used for wound healing, hemostasis, bone regeneration, drug delivery and sample collection. He has 39 inventions in the last 11 years and has secured nine U.S. Patents.



INNOVATION 2025 AWARDS

INNOVATION WEEK HISTORY: *AWARDEES*

Most Promising New Inventions

2025	*Cardiac Cath Lab Mentor*	• Edward O'Leary, MD, MBA
2024	*Ruggedized Beam Helmet*	• Elizabeth Beam, PhD, RN • Sarah Dunsmore, PhD • Brian Knarr, PhD • Bethany Lowndes, PhD • Brianna Parr • Andrew Walski
2023	*Optimized Vascular Stent*	• Alexey Kamenskiy, PhD • Anastasia Desyatova, PhD • Ali Akbar Ahmadi • Jason MacTaggart, MD
2022	*System for Measuring Blood Pressure in Wearable Electronic Devices*	• Cody Anderson • Song-young Park, PhD
2021	*Improved Self-Pacing Treadmill*	• Brian Knarr, PhD • Travis Vanderheyden • Russell Buffum
2020	*Anterior Cervicial Space Spreader*	• Joseph McMordie, MD • Daniel Surdell, MD
2019	*PDE4B Selective Inhibitors*	• Corey Hopkins, PhD
2018	*Multiplex Assay for Rapid Detection of HSV1, HSV2, EBV and CMV by qPCR*	• Catherine Gebhart, PhD • Varun Kesharwani, PhD
2017	*Nanofiber Sponges for Hemostasis*	• Jingwei Xie, PhD • Shixuan Chen, PhD • Mark Carlson, MD
2016	*Compositions for Modulated Release of Proteins and Methods of Use Thereof*	• Joyce Solheim, PhD • Tatiana Bronich, PhD
2015	*Emergency Medicine Care Portfolio: Wound Irrigation System & Oral Airway Management*	• Michael Wadman, MD, FASEP • Thang Nguyen, MSN, APRN, FNP-C
2014	*Orthagonal AquaBlade*	• Jason MacTaggart, MD
2013	*Targeted Glyoxalase-1 Gene Transfer to Prevent Cardiovascular and End-Organ Complications in Diabetes*	• Keshore Bidasee, PhD
2012	*Small Molecule in Vivo Inhibitors of the N-Terminal Protein Interacting Domain of RPA1*	• Gregory Oakley, PhD
2011	*Novel Target for the Treatment of Renal Fibrosis*	• Babu Padanilam, PhD
2010	*Noninvasive Monitoring of Functional Behaviors in Ambulatory Human Populations*	• Stephen Bonasera, MD, PhD
2009	*Novel Antibiotic Compounds*	• Paul Dunman, PhD
2008*	*Anti-HIV Peptides and Methods of Use Thereof*	• Guangshun (Gus) Wang, PhD
2008*	*Sex Hormone Binding Globulin: New Target for Cancer Therapy*	• Janina Baranowska-Kortylewicz, PhD

**In 2008 the Most Promising New Invention award was shared.*

Special Awards

2025	**Invest Nebraska**	Innovation Champion
2025	**Thanh Nguyen, PhD, MSN, FNP-C**	Faculty Entrepreneur
2025	**RespirAI**	Startup of the Year
2025	**Ashok Puri, MS, MBBS**	Emerging Inventor
2024	**Maverick Technology Venture Alliance**	Innovation Champion
2024	**Breanna Hetland, PhD, RN**	Faculty Entrepreneur
2024	**Carecubes**	Startup of the Year
2024	**Jingwei Xie, PhD**	Innovator of the Year
2023	**Rebekah Gundry, PhD**	Emerging Inventor
2023	**University Medical Devices**	Startup of the Year
2022	**Bin Duan, PhD**	Emerging Inventor
2022	**Exavir Therapeutics**	Startup of the Year
2021	**Hanjun Wang, MD**	Innovator of the Year
2021	**Ensign Pharmaceutical**	Startup of the Year
2020	**COVID-19 Inventors**	Innovators of the Year
2020	**BreezMed**	UNeTech Startup of the Year
2019	**Benson Edagwa, PhD**	Emerging Inventor
2019	**FutureAssure**	UNeTech Startup of the Year
2018	**Biomechanics Dept., UNO**	Innovator of the Year
2018	**Centese, Inc.**	UNeTech Startup of the Year
2017	**Donny Suh, MD**	Emerging Inventor
2016	**Irving Zucker, PhD**	Innovator of the Year
2015	**Tammy Kielian, PhD**	Innovator of the Year
2014	**Marius Florescu, MD**	Emerging Inventor
2013	**Howard Gendelman, MD**	Innovator of the Year
2012	**Tammy Kielian, PhD**	Emerging Inventor
2011	**Jonathan Vennerstrom, PhD**	Lifetime Achievement
2010	**Amarnath Natarajan, PhD**	Emerging Inventor
2009	**Rodney Markin, MD, PhD**	Lifetime Achievement
2008	**Dong Wang, PhD**	Emerging Inventor
2007	**Robert LeVeen, MD**	Lifetime Achievement

Find event photos on UNeMed's Flickr page: http://bit.ly/UNePics

UNEMED **STAFF**

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Contracts Manager

- **JD, Creighton University School of Law**
- **Joined UNeMed: 2015**

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President & CEO

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- **Joined UNeMed: 2003**

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- **Joined UNeMed: 2009**

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tech transfer for nebraska

MISSION

UNeMed fosters innovation, advances research, and engages entrepreneurs and industry to commercialize novel technologies

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