

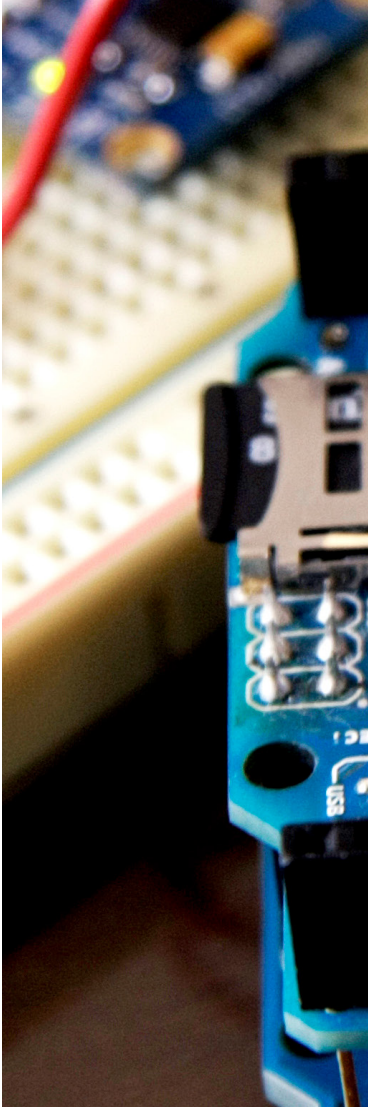
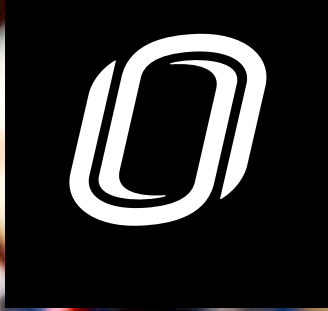


HONORING **INDIVIDUALS** FOR
NEW **INVENTIONS, PATENTS,**
& **LICENSED TECHNOLOGIES**

INNOVATION
2019
AWARDS

THURSDAY **OCTOBER 17**
TRUHLESEN CAMPUS EVENTS CENTER
5:00 PM





On behalf of UNMC and UNO leadership and UNeMed staff, we welcome you to the 2019 Research Innovation Awards Banquet as we celebrate all those who make our continued existence possible: You, the innovative UNMC and UNO faculty, staff and students who we honor today.

UNeMed's mission is simple: *Improve healthcare by fostering innovation, advancing biomedical research and engaging entrepreneurs and industry to commercialize novel technologies.*

Innovations all have the same humble beginning—an idea or a hypothesis. The path for an idea to become a product that improves the lives of millions is a daunting and perilous journey fraught with many obstacles. That is why UNeMed was created 28 years ago. We are here to help provide the advice, pathways and connections for your idea to grow and make the world a better place.

The Innovation Awards represent the culmination of Innovation Week as we celebrate the creators of novel technologies. Today, we will recognize the inventors who have submitted new inventions, received issued U.S. patents, and had a technology successfully licensed. We will also look to the future by recognizing a promising new invention from Corey Hopkins, Ph.D., and we'll honor Benson Edagwa, Ph.D., with our Emerging Inventor award. In addition, the University's new accelerator program, UNeTech, will present its Startup of the Year award.

The UNeMed staff is committed to helping you develop your new inventions and make vital connections with industry. Please draw upon our expertise, and visit us at 4460 Farnam Street (Annex 14 on the campus map). Our goal is to help you create relationships that will enable your work to benefit the lives of people throughout Nebraska and around the world.

Sincerely,

A handwritten signature in blue ink that reads "Michael Dixon".

Michael Dixon, Ph.D.
President and CEO, UNeMed



INNOVATION AWARDS SCHEDULE

Welcome

Michael Dixon, Ph.D.
President and CEO,
UNeMed

Opening Remarks

Jeffrey Gold, M.D.
Chancellor,
University of Nebraska Medical Center
University of Nebraska at Omaha

Keynote

Dennis Liotta, Ph.D.
Executive Director,
Emory Institute for Drug Development

Innovation Rewind: The Year in Review

Michael Dixon, Ph.D.
President and CEO,
UNeMed

Presentation of Awards:

- New Inventions
- Issued Patents
- Licensed Technology

Matt Boehm, Ph.D.
Director of Licensing,
UNeMed

Special Awards:

- UNeTech: Startup of the Year

Joe Runge
Associate Director,
UNeTech

- Most Promising New Invention
- Emerging Inventor

Matt Boehm, Ph.D.
Director of Licensing,
UNeMed



INNOVATION

2019

AWARDS

INNOVATION AWARDS 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, M.D.—transformed the Recognition Reception into the Research Innovation Awards.

The awards ceremony was the final event in a week of activities that celebrated the research and innovation at UNMC. In addition to recognizing researchers who secured intellectual property rights, UNeMed also added emerging inventor and lifetime achievement awards. In 2008 it also added the “Most Promising New Invention” as an annual award. In 2013, UNeMed presented for the first time ever, an “Innovator of the Year” Award. Last year, the awards finally included all UNO inventors as a part of a new services agreement, and UNeTech, the University's new incubator and accelerator program, presented its first Startup of the Year award.

Innovation Week is now about far more than recognizing a handful of UNMC 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 the least-known first-year student who might know a better way. The program has grown into the Research Innovation Awards Banquet, an exclusive, invitation-only event that brings together innovators and leadership from two different campuses.

Last year, the Most Promising New Invention was a novel multiplex assay that effectively detects four types of human herpes viruses. The assay employs a dual target approach for each genome, minimizing the risk of fals negatives due to viral mutation.

The first ever UNeTech Startup of the Year went to Centese, Inc., which is developing a chest tube that automatically clears blockages.

Finally, the University of Nebraska at Omaha's Department of Biomechanics—led by world expert and founding chair, Nicholas Stergiou, Ph.D.—was UNeMed's Innovator of the Year for a wide array of innovations.

For example, Dr. Stergiou and collaborator Philippe Malcom, Ph.D., have partnered with J. Brasch Co., a Nebraska-based elder care company, to develop a next-generation gait analysis platform. Another biomechanics invention is the basis of an Omaha startup company that is working on a prototype that can detect concussions.

UNO's biomechanics has also made several innovations in prosthetics, and a device that uses human motion to discover the unknowns about Chronic Obstructive Pulmonary Disorder, the fifth-leading cause of death worldwide.



Dr. Stergiou





NEW INVENTION NOTIFICATION CONTRIBUTORS

Iqbal Ahmad
Abhijit Aithal*
Yosif Almoshari
Prokopios Antonellis
Walker Arce
Majid Asawaer
David (Curt) Babbitt
Vimla Band
Janina Baranowska-Kortylewicz
Dhundy Bastola
Surinder Batra*
Brett Begley
Emily Bender
Gregory Bennett*
Ryan Booton
John Brady
Bradley Britigan
Holly Britton
Tatiana Bronich
Ethan Brush
Michael Campagna
W. Scott Campbell*
James Campbell
Adam Case
Kelly Caverzagie
Ioannis Chatzizisis
Bhavana Chhunchha*
Seoung-Ryoung Choi
Meg Cordes
Brad Corr
Jesse Cox
Aneesha Dasgupta
Kaustubh Datta
Valerie Deacon
Devin DeLuna
William Denton
Punita Dhawan
Bin Duan*
Michael Duryee
Samikshan Dutta
Alex Dzewaltowski
Benson Edagwa*
Iram Fatima
Janice Flegle*
Jason Foster
Kai Fu
Lie Gao
James Gehringer*
Howard Gendelman*
Dario Gherzi
Andrew Goldsweig
Arash Gonabadi
Santhi Gorantla*
Denise Gorski
Barbara Grant
Timothy Greiner
Channabasavaiah Gurumurthy*
James Hagen
Hani Haider*
Matthew Halanski*
Matt Hale
Jacy Hannan*
Mohtadin Hashemi
Shane Havens
Art Heires
Jonathan Herskovitz
Kelli Herstein
Juan Hong
Corey Hopkins*
Terry Housh
Chenyu (Victor) Huang
Javeed Iqbal
Maneesh Jain*
Zhenshan Jia
Jason Johanning*
Loretta Jophlin
Wade Junker*
Alexey Kamenskiy
Sukhwinder Kaur
Heidi Keeler
Varun Keshewani
Bhavesh Kevadiya
Tammy Kielian
Ryan King*
Brian Knarr*
Prakash Kshirsagar*
Maximillian Kurz*
Michael Lankhorst

New Inventions: Continued on next page

*Multiple

INNOVATION

2019

AWARDS

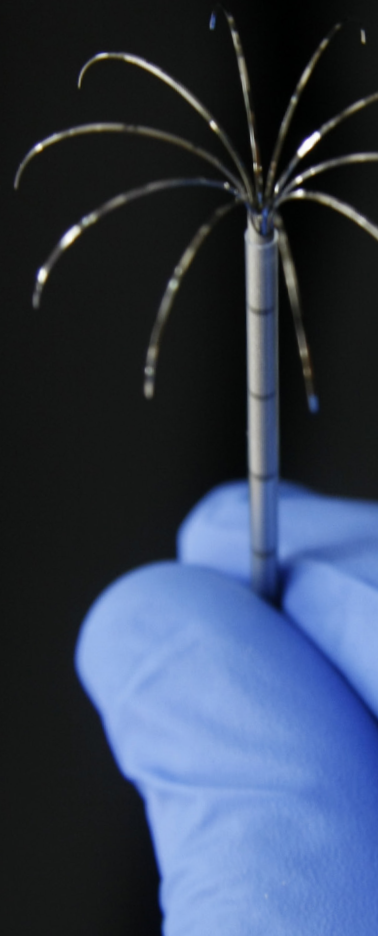
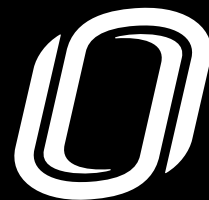
Continued from previous page

NEW INVENTION NOTIFICATION CONTRIBUTORS

Yulong Li
Steven Lisco*
Scott Lyons
Yuri Lyubchenko*
Jason MacTaggart*
Philippe Malcolm
Kaspars Maleckis
Nicholas Markin*
Sameer Mirza
Biswajit Mishra*
Aaron Mohs
Caitlin Murphy
Sara Myers
Jayaram Lakshmaiah Narayana*
Prabakaran Narayanasamy
Carl Nelson
Amy Nelson
Thang Nguyen*
Thomas Nicholas
Gregory Oakley
Catherine Orzechowski
Abhishek Parakh
Brian Peters
James Pierce
Frank Pietrantonio
Daniel Podany
Larisa Poluektova*
Jill Poole
Aaron Priluck
Bowen Qi
Satyanarayana Rachagani
Rongguo Ren*
Stephen Rennard
Brian Ricks
Debra Romberger
David Salazar
Richard Schmidt
Marcia Shade
Ashu Shah*
Sunandini Sharma
Wen Shi*
Surendra Shukla
Amar Singh*
Pankaj Singh*
Dhirendra Singh*
Ka-Chun Siu
Isidore Sossa
Nicholas Staffend*
Terry Stentz
Nicholas Stergiou*
Jeyamkondan Subbiah
Mahadevan Subramaniam
Donny Suh*
Yuanyuan Sun
James Talmadge
Pooja Teotia
Geoffrey Thiele
Katelynn Towne
Melanie Tuamoheloa
Travis Vanderheyden*
Trevor VanSchooneveld
Elizabeth Veach
Johnson Vitharikunnil John
Chad Vokoun
Michael Wadman*
Dong Wang*
Guangshun Wang*
Hanjun Wang*
Xin Wei
Sandra Willett*
Xinyuan Xi
Jingwei Xie*
Kelsey Yamada
Jennifer Yentes
Jong-Hoon Youn
Keaton Young
Karen Zagorski*
Dongze Zhang
Gang Zhao
Siwei Zhao
Irving Zucker*
Jorge Zuniga*

*Multiple

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





Corey Hopkins, Ph.D.

*Associate Professor, Department of Pharmaceutical Sciences,
University of Nebraska Medical Center*

PDE4B Selective Inhibitors

Corey Hopkins, Ph.D., is developing a novel series of phosphodiesterase 4 (PDE4) specific inhibitors for the treatment of inflammatory diseases.

PDE4 regulates inflammation, and is involved in a number of inflammatory diseases such as chronic obstructive pulmonary disease, rheumatoid arthritis, psoriasis, atopic dermatitis, inflammatory bowel disease; and central nervous system diseases that include drug addiction, schizophrenia and neurodegenerative diseases.

Several approved drugs currently target PDE4, but with side effects—like nausea and vomiting—that limit their use. Furthermore, many of the current PDE4 inhibitors have poor uptake into the central nervous system, which limits their use in treating central nervous system diseases.

UNMC's new PDE4 inhibitors specifically target the B isoform of PDE4, which should help significantly reduce side-effects such as nausea and vomiting.

The new PDE4 inhibitors are designed for increased uptake into the central nervous system, making them more useful than current drugs for treating central nervous system-related inflammatory diseases.

Initial lead compounds exhibit nanomolar potency against PDE4B, enhanced selectivity for PDE4B, and good uptake into the brain. Initial animal studies have also shown significant improvement in a mouse model of cocaine addiction.

Dr. Hopkins' novel PDE4B inhibitors can be used to treat a wide array of inflammatory disorders and could provide a novel mechanism for treating a number of CNS-based inflammatory disorders.

Dr. Hopkins received his Ph.D. in 2001 from the University of Pittsburgh, and spent seven years working in the pharmaceutical industry. He then spent eight years as Associate Director of Medicinal Chemistry in Vanderbilt's Center for Drug Discovery before joining UNMC in 2016.

EMERGING INVENTOR



Benson Edagwa, Ph.D.

Assistant Professor, Department of Pharmacology and Experimental Neuroscience, University of Nebraska Medical Center

Benson Edagwa, Ph.D., is our 2019 Emerging Inventor of the year, in recognition of his innovations in the development of long-acting antiretroviral therapies.

Dr. Edagwa has been an inventor on 11 new inventions submitted over the last five years, including three in fiscal year 2019. Dr. Edagwa is an inventor on 11 pending provisional and non-provisional patent applications.

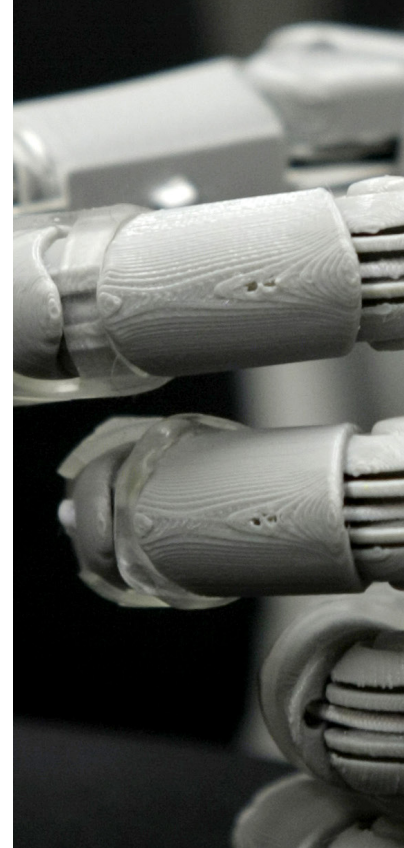
Dr. Edagwa's work has focused on the development of long-acting antiretroviral formulations for the treatment of HIV and Hepatitis B. He has developed, and is working on, long-acting formulations for numerous drugs including cabotegravir, lamivudine, abacavir, emtricitabine and tenofovir.

Dr. Edagwa is a key inventor of LASER ART (long acting slow effective release antiretroviral therapy). LASER ART shows great promise as a treatment that could be given to HIV patients once every six months or even just once a year. LASER ART was also a key component in a recent study from Dr. Howard Gendelman's lab, where LASER ART was combined with CRISPR-Cas9 to eradicate HIV from mice.

The three inventions involving Dr. Edagwa from fiscal year 2019 involve the development of LASER ART formulations of cabotegravir (and other integrase inhibitors) for the treatment of HIV and LASER ART formulations of a drug to treat Hepatitis B.

Dr. Edagwa's work has attracted interest from numerous pharmaceutical companies and was a component of a collaboration with a major pharmaceutical company to explore the development of long-acting antiretroviral therapy for HIV.

Dr. Edagwa, who joined UNMC in 2012, received his Ph.D. from Louisiana State University in Organic and Medicinal Chemistry.



STARTUP OF THE YEAR

UNeTech is the University of Nebraska's startup incubator and accelerator in Omaha, nurturing early-stage companies that have ties to the University.



FutureAssure
Jason Johanning, M.D.

This year UNeTech honors one of its incubator companies "in recognition of outstanding achievement to translate innovation into vital new products."

The second "Startup of the Year" award goes to FutureAssure.

FutureAssure is creating the first product to objectively measure a patient's risk in surgery. It gives medical teams objective measures of patient risks using a simple device to physically assess patients, custom profiles to integrate patient information and analytic software produced from decades of research.

FutureAssure gives doctors and patients the necessary information to assure the future of medical decisions and the safety of surgery.

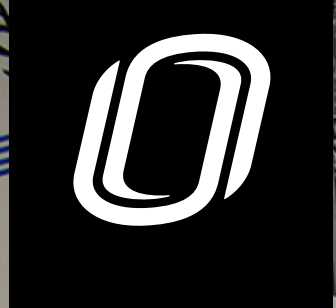
TECHNOLOGIES LICENSED

NSG cmah-/- Mice	<ul style="list-style-type: none"> • Channabasavaiah Gurumurthy • Larisa Poluektova • Santhi Gorantla
Strategic Planning Software	<ul style="list-style-type: none"> • Jeffrey Gold • David Padgett
Toxoplasma gondii Vaccines	<ul style="list-style-type: none"> • Paul Davis
Assay for Detection of HSV1, HSV2, EBV, and CMV	<ul style="list-style-type: none"> • Varun Keshewani
Ergonomic surgical loupes head strap	<ul style="list-style-type: none"> • Donny Suh
Alcohol Dehydrogenase Expressing VA-13 Cells	<ul style="list-style-type: none"> • Dahn Clemens
Science Education Assessments	<ul style="list-style-type: none"> • Christine Cutucache • Neal Grandgenett • William Tappich
Portable Laparoscope	<ul style="list-style-type: none"> • Chandrakanth Are • Madhuri Are • Dennis Alexander

CREATORS OF LICENSED TECHNOLOGY

Dennis Alexander
Chandrakanth Are
Madhuri Are
Dahn Clemens
Christine Cutucache
Paul Davis
Jeffrey Gold
Santhi Gorantla

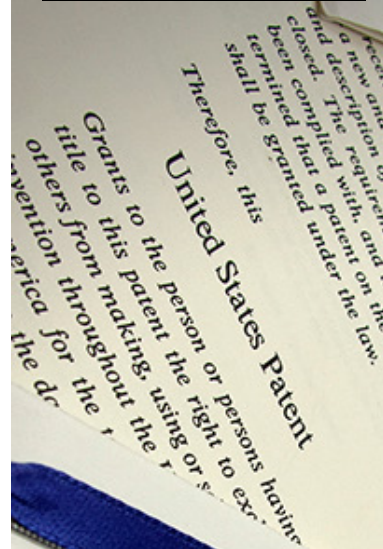
Neal Grandgenett
Channabasavaiah Gurumurthy
Varun Keshewani
David Padgett
Larisa Poluektova
Donny Suh
William Tapprich



INVENTORS WITH ISSUED PATENTS

Shane Farritor*
Marius Florescu
Gregory Gordon
Hani Haider*
Tony Hollingsworth
Amy Lehman*
Eric Markvicka

Thomas McDonald
Dmitry Oleynikov*
Prakash Radhakrishnan
Joseph Vetro
Dong Wang*
Guangshun Wang



PATENTS ISSUED

1. "Lock-Block Shield Device"

U.S. Patent No. 10,010,297 — issued July 3, 2018

- Gregory Gordon

2. "Method of Targeting Glycoproteins to Treat Cancer"

U.S. Patent No. 10,023,652 — issued July 17, 2018

- Michael (Tony) Hollingsworth
- Prakash Radhakrishnan

3. "Compositions and Methods for the Treatment of Cancer"

U.S. Patent No. 10,022,325 — issued July 17, 2018

- Alexander Kabanov
- Daria Alakhova
- Yi Zhao

4. "Stent To Assist In Arteriovenous Fistula Formation"

U.S. Patent No. 10,034,739 — issued July 31, 2018

- Marius Florescu

5. "On-Board Tool Tracking System and Methods of Computer Assisted Surgery"

U.S. Patent No. 10,080,617 — issued September 25, 2018

- Ibrahim Al-Shawi
- Hani Haider
- O. Andres Barrera



Patents Issued. Continued on next page

**Multiple*

PATENTS ISSUED

6. “Modified Pigment Epithelium-Derived Factor (PEDF) Peptides and Uses Thereof For Treating Neovascular Diseases, Inflammatory Diseases, Cancer, and for Cytoprotection”

U.S. Patent No. 10,081,668 — issued September 25, 2018

- Serguei Vinogradov
- Jack Henkin
- Ignacio Melgar-Asensio
- Olga Volpert

7. “Macromolecular Delivery Systems for Non-Invasive Imaging, Evaluation and Treatment of Arthritis and Other Inflammatory Diseases”

U.S. Patent No. 10,092,662 — issued October 9, 2018

- Dong Wang
- Jindrich Kopecek
- Pavla Kopeckova
- Scott Miller

8. “On-Board Tool Tracking System and Methods of Computer Assisted Surgery”

U.S. Patent No. 10,105,149 — October 23, 2018

- Hani Haider
- Ibrahim Al-Shawi
- O. Andres Barrera
- David Saunders

9. “Robotic Surgical Devices, Systems and Related Methods”

U.S. Patent No. 10,111,711 — issued October 30, 2018

- Shane Farritor
- Tyler Wortman
- Ryan McCormick
- Dmitry Oleynikov
- Kyle Strabala
- Amy Lehman

10. “Anti-Microbial Peptides and Coatings”

U.S. Patent No. 10,144,767 — issued December 4, 2018

- Guangshun Wang

11. “Macromolecular Delivery Systems for Non-Invasive Imaging, Evaluation and Treatment of Arthritis and Other Inflammatory Diseases”

U.S. Patent No. 10,172,962 — issued January 8, 2019

- Dong Wang
- Scott Miller
- Pavla Kopeckova
- Jindrich Kopecek

Continued from previous page

PATENTS ISSUED

12. “Creatine Ester Anti-Inflammatory Compounds and Formulations”

U.S. Patent No. 10,206,897 — issued February 19, 2019

- Donald Miller
- Thomas McDonald
- Dennis Robinson
- Jon Wagner
- Samuel Augustine

13. “Single Site Robotic Device and Related Systems and Methods”

U.S. Patent No. 10,219,870 — issued March 5, 2019

- Tom Frederick
- Joe Bartels
- Eric Markvicka
- Shane Farritor
- Jack Mondry

14. “Controlled Release Peptide Compositions and Uses Thereof”

U.S. Patent No. 10,220,002 — issued March 5, 2019

- Joseph Vetro
- Sam Sanderson

15. “On-Board Tool Tracking System and Methods of Computer Assisted Surgery”

U.S. Patent No. 10,219,811 — issued March 5, 2019

- O. Andres Barrera
- Ibrahim Al-Shawi
- Hani Haider

16. “Robotic Surgical Devices and Related Methods”

U.S. Patent No. 10,307,199 — issued June 4, 2019

- Mark Rentschler
- Nathan Wood
- Amy Lehman
- Jason Dumpert
- Dmitry Oleynikov
- Shane Farritor



AWARD WINNERS

Most Promising New Invention

2019	Corey Hopkins, Ph.D.	<i>PDE4B Selective Inhibitors</i>
2018	Catherine Gebhart, Ph.D. Varun Kesharwani, Ph.D.	<i>Multiplex Assay for Rapid Detection of HSV1, HSV2, EBV and CMV by qPCR</i>
2017	Jingwei Xie, Ph.D. Shixuan Chen, Ph.D. Mark Carlson, M.D.	<i>Nanofiber Sponges for Hemostasis</i>
2016	Joyce Solheim, Ph.D. Tatiana Bronich, Ph.D.	<i>Compositions for Modulated Release of Proteins and Methods of Use Thereof</i>
2015	Michael Wadman, M.D., F.A.S.E.P. Thang Nguyen, M.S.N., A.P.R.N., F.N.P.-C.	<i>Emergency Medicine Care Portfolio: Wound Irrigation System & Oral Airway Management</i>
2014	Jason MacTaggart, M.D.	<i>Orthogonal AquaBlade</i>
2013	Keshore Bidasee, Ph.D.	<i>Targeted Glyoxalase-1 Gene Transfer to Prevent Cardiovascular and End-Organ Complications in Diabetes</i>
2012	Gregory Oakley, Ph.D.	<i>Small Molecule in Vivo Inhibitors of the N-Terminal Protein Interacting Domain of RPA1</i>
2011	Babu Padanilam, Ph.D.	<i>Novel Target for the Treatment of Renal Fibrosis</i>
2010	Stephen Bonasera, M.D., Ph.D.	<i>Noninvasive Monitoring of Functional Behaviors in Ambulatory Human Populations</i>
2009	Paul Dunman, Ph.D.	<i>Novel Antibiotic Compounds</i>
2008*	Guangshun (Gus) Wang, Ph.D.	<i>Anti-HIV Peptides and Methods of Use Thereof</i>
2008*	Janina Baranowska-Kortylewicz, Ph.D.	<i>Sex Hormone Binding Globulin: New Target for Cancer Therapy</i>

Special Awards

2019	Benson Edagwa, Ph.D.	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, M.D.	Emerging Inventor
2016	Irving Zucker, Ph.D.	Innovator of the Year
2015	Tammy Kielian, Ph.D.	Innovator of the Year
2014	Marius Florescu, M.D.	Emerging Inventor
2013	Howard Gendelman, M.D.	Innovator of the Year
2012	Tammy Kielian, Ph.D.	Emerging Inventor
2011	Jonathan Vennerstrom, Ph.D.	Lifetime Achievement
2010	Amarnath Natarajan, Ph.D.	Emerging Inventor
2009	Rodney Markin, M.D., Ph.D.	Lifetime Achievement
2008	Dong Wang, Ph.D.	Emerging Inventor
2007	Robert LeVeen, M.D.	Lifetime Achievement

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



Jeff Andersen

Contracts Manager

- J.D., Creighton University School of Law
- Joined UNeMed: 2015



Matthew Boehm

Director of Licensing

- Ph.D., Cancer Biology, University of Nebraska Medical Center
- Joined UNeMed: 2009



Michael Dixon

President & CEO

- Ph.D., Molecular Genetics, University of Nebraska Medical Center
- Joined UNeMed: 2003



Valerie Gunderson

Office Manager

- Joined UNeMed: 2007



Cori Harsh

Accountant

- Joined UNeMed: 2009



Charlie Litton

Marketing & Communications Manager

- M.A., Journalism, University of Nebraska-Lincoln
- Joined UNeMed: 2013



Catherine Murari-Kanti

Licensing Specialist

- Ph.D., Cancer Biology, University of Nebraska Medical Center
- Joined UNeMed: 2016



Jason T. Nickla

Vice President & Director of Intellectual Property

- J.D., Creighton University School of Law
- LL.M., International Intellectual Property Law, Chicago-Kent College of Law
- Joined UNeMed: 2009



Joe Runge

Business Development Manager

- M.S., Molecular Biology, University of Iowa
- J.D., University of Iowa
- Joined UNeMed: 2005



Tyler Scherr

Licensing Associate

- Ph.D., Biomedical Research, University of Nebraska Medical Center
- Joined UNeMed: 2016



Mindy Ware

Paralegal

- Joined UNeMed: 2010



