



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

INNOVATION 2014 AWARDS



THURSDAY **OCTOBER 23**
DRC | AUDITORIUM
4:00 PM



On behalf of the UNMC leadership and UNeMed staff, we welcome you to the 2014 UNeMed Innovation Awards, which recognize the significant and ongoing innovations of the UNMC faculty, staff, and students.

UNeMed's mission is simple to articulate: *We are here to help 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 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 exists. 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 technology at the University of Nebraska Medical Center. Today, we will recognize the inventors who have submitted new inventions, received issued U.S. patents, and successfully licensed technology. In addition, we will look to the future by recognizing new technology with strong potential, and honor Dr. Marius Florescu with the 2014 UNeMed Emerging Inventor 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) or in our satellite office at 1007 Durham Research Center I. Our goal is to help you create relationships that will enable your work to positively impact the lives of people throughout Nebraska and around the world.

Sincerely,

A handwritten signature in blue ink, reading "Michael Dixon".

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

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INNOVATION AWARDS SCHEDULE

Welcome

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

Opening Remarks

Jeffrey Gold, M.D.
Chancellor, UNMC

Innovation Rewind: The Year in Review

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

Presentation of Awards:

- New Inventions
- Issued Patents
- Licensed Technology

Steven Schreiner, Ph.D.
Vice President & Director of
Marketing and Licensing, UNeMed

Special Awards:

- Most Promising New Invention
- Emerging Inventor

Steven Schreiner, Ph.D.
Vice President & Director of
Marketing and Licensing, UNeMed

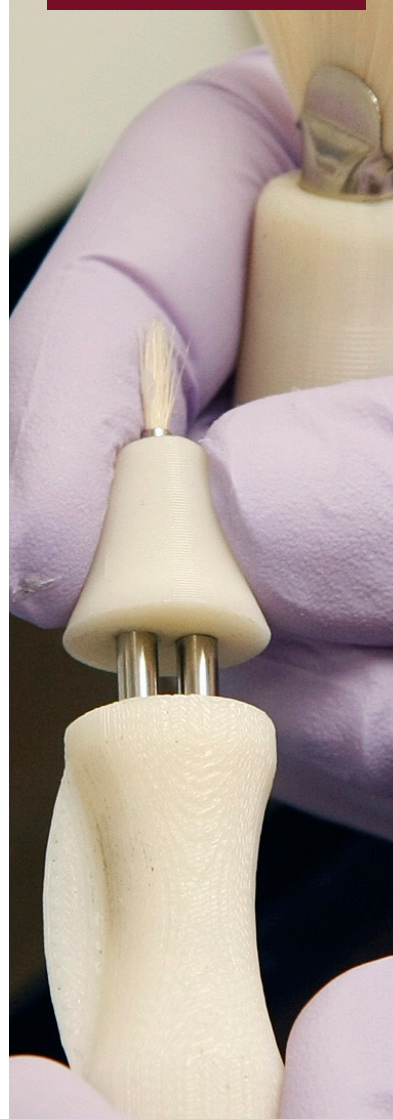
Closing Remarks

Reception

DRC I Atrium



INNOVATION 2014 AWARDS



Daria Alakhova	KM Monirul Islam*
Peter Anaradian	Peter Iwen
Daniel Anderson*	Jiang Jiang
Jyothi Arikath	Jason Johanning
Azad Azadmanesh	Katherine Jones
Hamid Band	Alexander Kabanov*
Janina Baranowska-Kortylewicz	Alexey Kamenskiy*
Surinder Batra*	Tammy Kielian
Bernard Baxter	Lynell Klassen*
Kishor Bhakat	Jill Knoell
Ben Boedeker	Maximillian Kurz*
Xavier Brazzolotto	Rongshi Li*
Bradley Britigan*	Xinming Liu*
Tatiana Bronich	Oksana Lockridge
Liliana Bronner*	Jason MacTaggart*
Matthew Byarlay	Amy Mantz
Mark Carlson	Eyal Margalit
Eric Cruz	Eric Markvicka
Prithviraj Dasgupta	Joseph John McBride*
Hossein Dehghani	Yarden Medeiros
Cyrus Desouza	Ted Mikuls
Albert Dunn	Vincent Morris
Michael Duryee*	Mukul Mukherjee
Yuris Dzenis	Florian Nachan
Edward Faber, Jr.	Prabakaran Narayanasamy*
Shane Farritor	Amarnath Natarajan
Edward Fehringer	Carl Nelson*
Ann Fetrick*	Thang Nguyen*
Tom Frederick	Trong Nguyen*
Apar Ganti*	Gregory Oakley
James Gehringer	Dmitry Oleynikov
Howard Gendelman*	David Oupicky*
Jason Gene Glanzer	Babu Padanilam
Maurice Godfrey*	Amol Patil
Stacey Gorniak	Nicholas Phillips*
Robert Tanner Hagelstrom	Iraklis Pipinos*
Hani Haider	Ablofazl Pourghodrat
James Hammel	Prakash Radhakrishnan
Curtis Hartman	Pierre-Yves Renard
Steven Hinrichs	Stephen Rennard
Michael (Tony) Hollingsworth	Ali Rezaeian
David Holt	June Ryan*
Yunlong Huang	Sam Sanderson*

*Multiple

NEW INVENTION NOTIFICATION CONTRIBUTORS

Lawrence Schopfer
Dipika Singh
Cynthia Skye
Kim Soper*
Nicholas Stergiou*
Lori Stevens*
Barbara Switzer
Benjamin Terry
Geoffrey Thiele*
Changhai Tian
Dawn Venema

Joseph Vetro
Saraswathi Viswanathan*
Michael Wadman*
Richard Walker
Dong Wang*
Guangshun (Gus) Wang*
Zhulian Wang
Tony Wilson*
Jingwei Xie
Jennifer Yentes
Jialin Zheng*

INVENTORS WITH ISSUED PATENTS

O. Andres Barrera
Thomas Caffrey
Jason Dumpert
Allison DiMartino
Kathryn Done
Shane Farritor*
Howard Gendelman
Adnan Hadzialic
Hani Haider
M. Susan Hallbeck
Steven Hinrichs
Michael (Tony) Hollingsworth
Tim Judkins
Karl Kohlgraf
Vinod Labhassetwar

Amy Lehman
Xiang-De Liu
Jonathan Morse
R. Lee Mosley
Dmitry Oleynikov*
Hasan Otu
Stephen Platt
Stephen Rennard
Mark Rentschler
Ashley Reynolds
Khalid Sayood
Lawton Verner
Serguei Vinogradov
Guangshun (Gus) Wang
Nathan Wood

CREATORS OF LICENSED TECHNOLOGY

Surinder Kumar Batra
Elizabeth Beam
Kate Boulter
Anna Brynskikh Boyum
Tom Frederick
Shawn Gibbs
Gregory Gordon
Steven Hinrichs*
Michael (Tony) Hollingsworth

Katherine Jones
Jill Knoell
Marilynn Larson
Oksana Lockridge
Daniel T. Monaghan
Prakash Radhakrishnan
Lawrence Schopfer
Stephen Smith
Dawn Venema

*Multiple

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1. "Compositions and Methods for the Diagnosis and Treatment of Inflammatory Disorders and Fibrotic Diseases"

U.S. Patent No. 8,486,909 – issued July 16, 2013

- Stephen Rennard ■ Helgo Magnussen
- Tadashi Sato ■ Olaf Holz
- Xiang-De Liu

2. "Methods and Compositions for Inhibiting Diseases of the Central Nervous System"

U.S. Patent No. 8,491,890 – issued July 23, 2013

- Howard Gendelman
- R. Lee Mosley
- Ashley Reynolds

3. "Apoptosis-Modulating P53 Protein Therapy for Vascular Disorders and Nanoparticles Containing the Same"

U.S. Patent No. 8,507,437 – issued August 13, 2013

- Vinod Labhassetwar

4. "Amphiphilic Polymer-Protein Conjugates and Methods of Use Thereof"

U.S. Patent No. 8,535,656 – issued September 17, 2013

- Alexander Kabanov ■ Xiang Yi
- Serguei Vinogradov ■ William Banks

5. "Method and Apparatus for Computer Aided Surgery"

U.S. Patent No. 8,560,047 – issued October 15, 2013

- O. Andres Barrera
- Hani Haider

6. "Ergonomic Handle and Articulating Laparoscopic Tool"

U.S. Patent No. 8,585,734 – issued November 19, 2013

- M. Susan Hallbeck ■ Tim Judkins
- Dmitry Oleynikov ■ Jonathan Morse
- Lawton Verner ■ Allison DiMartino
- Katherine Done

7. "Robotic Devices With Arms and Related Methods"

U.S. Patent No. 8,604,742 – issued December 10, 2013

- Shane Farritor ■ Stephen Platt
- Mark Rentschler ■ Nathan Wood
- Dmitry Oleynikov ■ Jason Dumpert
- Adnan Hadzialic

8. "Compositions and Methods for Preventing or Treating Cancer"

U.S. Patent No. 8,653,233 – issued February 18, 2014

- Michael (Tony) Hollingsworth
- Karl Kohlgraf
- Thomas Caffrey

Patents Issued: Continued on next page

PATENTS ISSUED Continued from previous page

9. “Multifunctional Operational Component for Robotic Devices”

U.S. Patent No. 8,679,096 – issued March 25, 2014

- Mark Rentschler
- Amy Lehman
- Shane Farritor

10. “System and Method for Sequence Distance Measure for Phylogenetic Tree Construction”

U.S. Patent No. 8,725,419– issued May 13, 2014

- Steven Hinrichs
- Khalid Sayood
- Hasan Otu

11. “Anti-HIV Peptides and Methods of Use Thereof”

U.S. Patent No. 8,722,616– issued May 13, 2014

- Guangshun (Gus) Wang

TECHNOLOGIES LICENSED

Tissue Handling Device	<ul style="list-style-type: none">• Anna Brynskikh Boyum• Tom Frederick
Antibody for Detecting Mucin 4	<ul style="list-style-type: none">• Surinder Kumar Batra
Method to Recover Human BChE	<ul style="list-style-type: none">• Steven Hinrichs• Oksana Lockridge• Lawrence Schopfer• Marilyn Larson
Radiation Safety Device	<ul style="list-style-type: none">• Gregory Gordon
NMDA Modulators	<ul style="list-style-type: none">• Daniel T. Monaghan
Instructional Health/Safety Videos	<ul style="list-style-type: none">• Elizabeth Beam• Shawn Gibbs• Jill Knoell• Stephen Smith
Secure Lab Results Reporting Software	<ul style="list-style-type: none">• Steven Hinrichs
Targeting Glycoproteins to Treat Cancer	<ul style="list-style-type: none">• Michael (Tony) Hollingsworth• Prakash Radhakrishnan
Instructional Health/Safety Videos	<ul style="list-style-type: none">• Dawn Venema• Kate Boulter• Katherine Jones

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**Jason MacTaggart, M.D.**

*Assistant Professor,
Department of Surgery, Section of Vascular Surgery*

Orthogonal AquaBlade

The most promising new invention of 2014 is a novel medical device, called the AquaBlade, which may help revolutionize the treatment of life threatening disorders such as aortic dissections.

Dr. MacTaggart and his colleagues designed a system that uses a high-pressure water jet to safely cut tissue amid flowing blood within the vasculature. The AquaBlade could also be useful for cutting other objects within blood vessels, including stents that patients have outgrown.

Dr. MacTaggart's group is currently working with a major medical device company to build a functional prototype for preliminary testing. In addition to the AquaBlade, Dr. MacTaggart is also working on numerous other medical device-related inventions.

Dr. MacTaggart received his M.D. in 2000 from the University of Iowa College of Medicine. From 2003-2005 Dr. MacTaggart conducted postdoctoral research studies in aneurysm biology with Timothy Baxter, M.D., at the University of Nebraska Medical Center, and in 2007 he completed his residency in general surgery at UNMC under Bud Shaw, M.D. After completing a residency in vascular and endovascular surgery at the University of California San Francisco in 2009, he joined the UNMC faculty in the Department of Surgery.

EMERGING INVENTOR



Marius Florescu, M.D.

*Associate Professor,
Department of Internal Medicine, Nephrology Division*

Marius Florescu, M.D., is our 2014 Emerging Inventor of the year in recognition of inventions he is making to advance and improve clinical practice and patient care.

In addition to his clinical practice as a kidney specialist and interventional nephrologist, Dr. Florescu invented two technologies that could significantly improve the success of hemodialysis for patients suffering with kidney disease or renal failure—A novel hemodialysis catheter and a device that improves the arteriovenous or AV fistula.

The hemodialysis catheter is designed to disrupt the fibrous sheet that often forms—and eventually blocks—current catheters. Dr. Florescu's elegant design eliminates the need for additional procedures to remove the blockage. The device is currently licensed to a startup company that plans to conduct pre-clinical testing at UNMC next year.

The second invention is a device that represents the first major improvement for the AV fistula in more than 40 years. An associate professor at UNMC, Dr. Florescu also made a critical discovery during his proof-of-concept work: Identifying the first known animal model in which fistulas can mature.

Dr. Florescu's device promotes better AV fistula creation and maturation in hemodialysis, and is under active evaluation by several companies.

Dr. Florescu, who joined UNMC in 2006, received his M.D. from Carol Davila University in Bucharest, Romania. In Romania he received training in head and neck surgery and ear, nose and throat conditions before completing an internal medicine residency at Danbury Hospital, which is associated with the Yale University School of Medicine. He then completed a nephrology fellowship at the State University of New York Health Science Center at Brooklyn where he was Chief Nephrology Fellow.

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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.

A year later, the awards ceremony became 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. In previous years UNeMed had presented Emerging Inventor and Lifetime Achievement awards on a biennial schedule.



Dr. Linder

Today, Innovation Week is about far more than recognizing a handful of UNMC scientists who secure 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.

Last year, the work of Keshore Bidasee, Ph.D., was featured as the most promising new invention, and top honors went to Howard Gendelman, M.D., as the first-ever Innovator of the Year.



Dr. Gendelman

Dr. Gendelman, the chairman of the Department of Pharmacology and Experimental Neuroscience, was honored for his work against neurodegenerative and infectious diseases. In 2013 UNeMed helped him build an industrial research partnership that will explore his nanoformulated antiretroviral therapy, called NanoART. If successful, NanoART could reduce the current need of daily medications for HIV management to a single, monthly dose.

Also in 2013, Dr. Gendelman initiated a human proof of concept study to test one portion of his vaccine strategy for Parkinson's disease.

Dr. Bidasee, an associate professor in the Department of Pharmacology and Experimental Neuroscience, developed a potentially ground-breaking treatment for complications associated with diabetes.

He identified a viral construct that strategically overexpresses the enzyme Glyoxalase-1. The enzyme targets and degrades the suspected cause of diabetic complications—a naturally occurring chemical, methylglyoxal, which is created by damaged cells when blood sugar levels are high.

Early testing shows his treatment not only stops damage in the kidneys, eyes and heart, but also shows promise in halting cognitive decline—a major concern in elderly diabetics. The gene transfer strategy even significantly reduces blood sugar levels.



Dr. Bidasee

AWARD WINNERS

Most Promising New Invention

- 2014 Jason MacTaggart, M.D. *Orthogonal AquaBlade*
- 2013 Keshore Bidasee, Ph.D. *Targeted Glyoxalase-1 Gene Transfer to Prevent Cardiovascular and End-Organ Complications in Diabetes*
- 2012 Gregory Oakley, Ph.D. *Small Molecule in Vivo Inhibitors of the N-Terminal Protein Interacting Domain of RPA1*
- 2011 Babu Padanilam, Ph.D. *Novel Target for the Treatment of Renal Fibrosis*
- 2010 Stephen Bonasera, M.D., Ph.D. *Noninvasive Monitoring of Functional Behaviors in Ambulatory Human Populations*
- 2009 Paul Dunman, Ph.D. *Novel Antibiotic Compounds*
- 2008* Guangshun (Gus) Wang, Ph.D. *Anti-HIV Peptides and Methods of Use Thereof*
- 2008* Janina Baranowska-Kortylewicz, Ph.D. *Sex Hormone Binding Globulin: New Target for Cancer Therapy*

Special Awards

- 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.

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