



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

# INNOVATION 2012 AWARDS



THURSDAY **OCTOBER 18**  
DRC I AUDITORIUM  
**4:00 PM**



## MESSAGE FROM DR. MICHAEL DIXON



On behalf of the UNMC leadership and UNeMed staff, we welcome you to the 2012 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 **Sherpas**; 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, today we will look to the future by recognizing new technology with strong potential, and honor Dr. Tammy Kielian with the 2012 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, PhD  
President and CEO, UNeMed Corporation

INNOVATION  
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# INNOVATION AWARDS PROGRAM

## Opening Remarks

**Dr. Michael Dixon**, President and CEO,  
UNeMed

## Keynote Speaker

**Dr. Jennifer Larsen**, Vice Chancellor  
for Research, UNMC

## Past Wins: Future Opportunities...

**Dr. Michael Dixon**, President and CEO,  
UNeMed

## Presentation of Awards:

- New Inventions
- Issued Patents
- Licensed Technology

**Dr. Steven Schreiner**, Licensing and  
Marketing Manager, UNeMed

## Special Awards:

- Most Promising New Invention
- Emerging Inventor Award

**Dr. Steven Schreiner**, Licensing and  
Marketing Manager, UNeMed

## Closing Remarks

## Reception

DRC | Atrium



# INNOVATION 2012 AWARDS







## NEW INVENTION NOTIFICATION CONTRIBUTORS

Iqbal Ahmad  
Shaheen Ahmed  
Keith Allen  
Jyothi Arikath  
Hamid Band\*  
Vimla Band\*  
Andres Barrera  
Joe Bartels\*  
Surinder Kumar Batra\*  
Elena Batrakova  
Kenneth Bayles  
Elizabeth Beam  
David Birdzell  
Ben H. Boedeker\*  
Stephen Bonasera  
Kathleen Boulter  
Tatiana Bronich

Roger Brown  
Walter Scott Campbell  
Jay Carlson  
Mark Carlson\*  
George Casale  
Fu Chen\*  
Aparajita Chowdhury  
Sanjib Chowdhury  
Prithviraj Dasgupta\*  
Adam de Laveaga  
Doug Derrrick  
Shi-Jian Ding  
Shane Farritor\*  
Kirk Foster  
Howard Fox  
Tom Frederick\*

Alison Freifeld  
Jered Garrison\*  
Howard Gendelman\*  
Shawn Gibbs  
Jason Gene Glanzer  
Gregory Gordon  
Alan Goyzueta  
Babu Guda  
Nicholas Haglund  
Hani Haider  
Susan Hallbeck\*  
James Hammel  
Mark Hanke  
Hubert Hickman\*  
Suzanne Higgins  
Steven Hinrichs  
Tony Hollingsworth

David Holt  
Xin Huang  
Yunlong Huang  
Zhenshan Jia\*  
Ashish Joshi\*  
Janyl Jumadinova  
Alexander Kabanov\*  
Jeffrey Kaipust  
Dawn Katafiasz  
Jake Kaufman  
Abby Kelly  
Tammy Kielian  
Kyung-Soo Kim  
Yeong Kim  
Jinu Kim\*  
Gustavo Larsen

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\*Multiple NIN's Submitted

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Tricia LeVan  
Yuju Li  
Xinming Liu\*  
Michael Long  
Xu Luo  
Vivek Mahajan\*  
Eric Markvicka\*  
Ryan McCormick  
Denise McGrath  
James McManis  
Sameer Mirza  
Dimitios Miserlis  
Bhopal Mohapatra  
Jack Mondry\*  
Adam Mosel  
Lee Mosley

Mukul Mukherjee  
Mayumi Naramura  
Amarnath Natarajan\*  
Carl Nelson\*  
Thang Nguyen\*  
Gregory Oakley\*  
Dmitry Oleynikov\*  
Jared Ostdiek\*  
Babu Padanilam\*  
Xiaming Pang  
Pinaki Panigrahi  
Steven Parkison  
Aimin Peng  
Lance Perez  
Iraklis Pipinos  
Larisa Poluektova

Abolfazl Pourghodrat\*  
Stephen Rennard  
Jakeb Riggle  
Svetlana Romanova  
Sam Sanderson\*  
Corinna Schmaderer  
Eric Schneider  
Byers Shaw, Jr.\*  
Dipika Singh  
Stephen Smith  
Nicholas Stergiou  
Mark Stroup  
Anuradha Subramanian  
Changhai Tian  
Ming-Ying Tsai  
Max Twedt

Joseph Vetro  
Hendrik Viljoen  
Serguei Vinogradov  
Michael Wadman\*  
Dong Wang\*  
Guangshun Wang\*  
San Ming Wang\*  
Hongxiu Wen\*  
Tyler Wortman  
Fang Yu  
Yang Yuan  
Wesley Zeger  
Yijia Zhang  
Xing Zhao  
Jialin Zheng\*  
Zhen Zhu

\*Multiple NIN's Submitted





## INVENTORS WITH ISSUED PATENTS

James Armitage  
Elena Batrakova  
William Beschorner  
Tom Caffrey  
Wing Chan  
Jason Dumpert\*  
Shane Farritor\*  
Kai Fu  
Timothy Greiner  
Adnan Hadzialic\*  
Thomas Hejkal  
Tony Hollingsworth  
Alexander Kabanov\*  
Peter Kador  
Karl Kohlgraf

Vinod Labhasetwar  
Donald Miller  
Carl Nelson  
Dmitry Oleynikov\*  
Stephen Platt\*  
Mark Rentschler\*  
Kimberly Ryland  
Jonathan Vennerstrom  
Serguei Vinogradov\*  
Julie Vose  
Guangshun Wang  
Dennis Weisenburger  
Nathan Wood\*  
Xiang Yi  
Guilin Zhan

\*Denotes multiples

## CREATORS OF LICENSED TECHNOLOGY

Keith Allen  
Oluwatoyin Asojo  
Elena Batrakova  
Ben Boedeker  
Tatiana Bronich  
Anna Brynskikh  
David Bylund  
Alison Freifeld  
Howard Gendelman  
Hubert Hickman  
Keith Johnson  
Ashish Joshi  
Alexander Kabanov\*  
Donald Miller  
Angie Rizzino

Byers Shaw Jr.  
Devika Soundara-Manickam  
Myron Toews  
Jing Tong  
Jonathan Vennerstrom  
Serguei Vinogradov\*  
James Wahl  
Scott Whitney  
Xiang Yi  
Xing Zhao

\*Denotes multiples

INNOVATION

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AWARDS



**1. “Robotic Devices with Agent Delivery Components and Related Methods”**

*U.S. Patent No. 7,960,935 – issued June 14, 2011*

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

**2. “Antimicrobial Peptides and Methods of Identifying the Same”**

*U.S. Patent No. 7,985,836 – issued July 26, 2011*

Guangshun Wang

**3. “Rotatable Surgery Table”**

*U.S. Patent No. 7,992,238 – issued August 9, 2011*

Thomas Hejkal  
Kimberly Ryland  
Carl Nelson

**4. “Amphiphilic Polymer-Protein Conjugates and Methods of Use Thereof”**

*U.S. Patent No. 8,017,151 – issued September 13, 2011*

Elena Batrakova  
Serguei Vinogradov  
Alexander Kabanov

**5. “Creatine Oral Supplementation Using Creatine Hydrochloride Salt”**

*U.S. Patent No. 8,026,385 – issued September 27, 2011*

Donald Miller  
Jonathan Vennerstrom  
Mark Faulkner

**6. “Pre-Transplant Accommodated Organs Resistant to Anti-Donor Immunity”**

*U.S. Patent No. 8,039,257 – issued October 18, 2011*

William Beschorner

**7. “Use of Hydrogen Sulfide in the Treatment of Eye Diseases”**

*U.S. Patent No. 8,092,838 – issued January 10, 2012*

Sunny Edet Ohia  
Catherine Atieno Opere  
Guilin Zhan  
Emmanuel Kulkami  
Ghislaine Kouamou



**8. “Methods for Identifying, Diagnosing, and Predicting Survival of Lymphomas”**

*U.S. Patent No. 8,131,475 – issued March 6, 2012*

Wing Chan  
Timothy Greiner  
Dennis Weisenburger  
James Armitage  
Kai Fu  
Julie Vose  
et al.

**9. “Topical Treatment of Cataracts in Dogs”**

*U.S. Patent No. 8,158,667 – issued April 17, 2012*

Peter Kador  
Milton Wyman  
Daniel Betts

**10. “Amphiphilic Polymer-Protein Conjugates and Methods of Use Thereof”**

*U.S. Patent No. 8,168,222 – issued May 1, 2012*

Alexander Kabanov  
Xiang Yi  
Serguei Vinogradov  
William Banks

**11. “Robotic Devices with Agent Delivery Components and Related Methods”**

*U.S. Patent No. 8,179,073 – issued May 15, 2012*

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

**12. “Method for Inhibiting Reperfusion Injury in the Brain”**

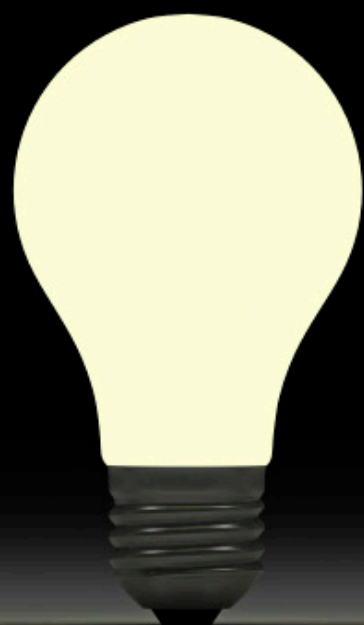
*U.S. Patent No. 8,182,807 – issued May 22, 2012*

Vinod Labhasetwar  
Maram Reddy

**13. “Compositions and Methods for Preventing or Treating Cancer”**

*U.S. Patent No. 8,193,309 – issued June 5, 2012*

Michael Anthony Hollingsworth  
Karl Kohlgraf  
Tom Caffrey





<b>Drug Target GLIPR1</b>	<ul style="list-style-type: none"> <li>• Oluwatoyin Asojo</li> </ul>
<b>NR6R Cells</b>	<ul style="list-style-type: none"> <li>• Angie Rizzino</li> </ul>
<b>IntúaCare Suite</b>	<ul style="list-style-type: none"> <li>• Hubert Hickman</li> <li>• Byers Shaw Jr.</li> </ul>
<b>Naturalistic Teaching Procedures</b>	<ul style="list-style-type: none"> <li>• Keith Allen</li> </ul>
<b>Nanozymes</b>	<ul style="list-style-type: none"> <li>• Anna Brynskikh</li> <li>• Elena Batrakova</li> <li>• Tatiana Bronich</li> <li>• Howard Gendelman</li> <li>• Alexander Kabanov</li> <li>• Devika Soundara-Manickam</li> <li>• Jing Tong</li> <li>• Serguei Vinogradov</li> </ul>
<b>LeptiPOL™</b>	<ul style="list-style-type: none"> <li>• Alexander Kabanov</li> <li>• Serguei Vinogradov</li> <li>• Xiang Yi</li> </ul>
<b>Creatine Ethyl Ester</b>	<ul style="list-style-type: none"> <li>• Donald Miller</li> <li>• Jonathan Vennerstrom</li> </ul>
<b>PT-INR Software</b>	<ul style="list-style-type: none"> <li>• Ashish Joshi</li> </ul>
<b>Alpha-2 Agonists</b>	<ul style="list-style-type: none"> <li>• David Bylund</li> <li>• Myron Toews</li> </ul>
<b>Intubating Laryngeal Tube</b>	<ul style="list-style-type: none"> <li>• Ben Boedeker</li> </ul>
<b>Antibodies</b>	<ul style="list-style-type: none"> <li>• Keith Johnson</li> <li>• James Wahl</li> </ul>
<b>Diagnostic Assay</b>	<ul style="list-style-type: none"> <li>• Alison Freifeld</li> <li>• Scott Whitney</li> <li>• Xing Zhao</li> </ul>

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**Gregory Oakley, Ph.D.**

*Associate Professor, College of Dentistry*

**Small Molecule In Vivo Inhibitors of the N-Terminal Protein Interacting Domain of RPA1**

Dr. Oakley's research interest is in the area of DNA damage and repair. Work performed in his laboratory focuses on deciphering the associated signal transduction pathways and how alterations to these pathways can lead to mutagenesis and ultimately carcinogenesis. Through ongoing studies that look into the specific phosphorylation events involved in protein-protein interactions with RPA1, that are required for normal pathway signaling, the identification of other proteins that are involved in the signaling pathway will be identified that can then be evaluated for their role in DNA damage and repair and their potential as targets for new therapeutic treatments.

Disclosed in the winning NIN is the identification of three lead compounds that inhibit the interaction of RPA1 with other known proteins that affect the DNA damage response in cells. Through these interactions, the identified compounds inhibit DNA damage repair, and act synergistically with cancer chemotherapeutics that are currently available, leading to increased cellular apoptosis. These compounds represent a first in class group of molecules that target the N-terminal protein interacting domain of RPA.

Dr. Oakley received his Ph.D. in toxicology from the University of Kentucky in 1997 and post-doctoral training at the University of Cincinnati Medical Center. He arrived at UNMC in December, 2005 and he and his wife have three daughters, all seven years apart in age.





### **Tammy Kielian, Ph.D.**

*Professor, Department of Pathology and Microbiology*

Dr. Kielian's research interests span the fields of neuroimmunology, infectious diseases, and neuroscience with a unifying theme of innate immunity. During the past 10+ years, Dr. Kielian's laboratory has employed a multi-disciplinary approach to investigate immune responses to the gram-positive pathogen *Staphylococcus aureus* (*S. aureus*) during abscess formation in the central nervous system (CNS) and biofilm formation in the periphery. Recently, Dr. Kielian's research has broadened to examine mechanisms whereby *S. aureus* biofilms thwart immune-mediated clearance utilizing mouse models of catheter-associated and orthopedic-device infection, as well as a novel model of cranial bone flap infection developed in the Kielian laboratory. A new area of research in Dr. Kielian's laboratory is focused on identifying whether aberrant glial activation contributes to neuron loss during the childhood neurodegenerative disease, Juvenile neuronal ceroid lipofuscinosis (JNCL or Juvenile Batten disease). Dr. Kielian's laboratory is aggressively pursuing therapeutics for the prevention and treatment of device-associated biofilm infections as well as slowing the progression of Juvenile Batten Disease.

In addition to developing therapeutics for biofilm infections and Juvenile Batten Disease, Dr. Kielian has worked with other UNMC researchers to develop a number of innovative technologies that together continue to generate significant commercial interest from companies such as Pfizer, Amgen, and Genentech.

Dr. Kielian received her B.S. in Biological Sciences from the University of Nebraska-Lincoln in 1991, a M.S. in Immunology from Kansas State University in 1994, and a Ph.D. in Microbiology from the University of Kansas in 1998. Following 2 ½ years of postdoctoral training and promotion to Research Assistant Professor at Dartmouth Medical School, Dr. Kielian joined the faculty of the University of Arkansas for Medical Sciences in 2001. In July 2008, Dr. Kielian was recruited to UNMC in the Department of Pathology and Microbiology. Dr. Kielian was raised in Stanton, NE and her parents are Douglas Raetz and Charlene Geiger. She is married to Dr. Mark Kielian and has two sons, Nate and Matt, ages 10 and 8. They have and continue to be tremendous supporters of her research endeavors. It goes without saying that a successful investigator has a talented and hardworking group of people backing him/her. On that point, Dr. Kielian would like to acknowledge the dedication and loyalty of her laboratory crew.

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Michael Dixon, Ph.D., President and CEO



Steven Schreiner, Ph.D., Licensing and Marketing Manager



Joe Runge, J.D., M.S., Sr. Licensing Specialist and B.D. Manager



Matthew Boehm, Ph.D., Sr. Licensing Specialist

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Jason Nickla, J.D., Director of Intellectual Property



Jack Mayfield, J.D., Contracts Manager



Cori Harsh, B.S., Finance Manager



Mindy Ware, ACP, Patent Associate







Val Gunderson, Office Manager



Sue Drammeh, B.S., Office Associate



Sandy Gianficaro, B.A., Office Assistant

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