UNC Biochemistry ↔ Biophysics

YEAR IN REVIEW

2013 Newsletter
Chair’s Message:

This year has been marked by both the exciting academic and research accomplishments of our students, faculty and staff, as well as sadness with the loss of beloved faculty member, Dr. John Sheehan. We hope you enjoy reading this newsletter, assembled with the creative energies of Amanda Chang, and her assistant Linda Burns, but made possible by your many contributions. We look forward to hearing from all of you, and especially want to encourage our alumni and friends of the department to stay in touch. In addition to the alumni day we held earlier this year, we hope to host future events to maintain and increase our connections with all of you. Our very best wishes for a happy and healthy 2014.

RESEARCH HIGHLIGHTS

UNC scientists awarded $1 million to develop new tools to study the protein methylome. Three scientists at UNC-CH (Marcy Waters, Brian Strahl, Xian Chen) received a $1 million grant from the W.M. Keck Foundation’s Medical Research Program to study a widespread but largely unexplored phenomenon that may be implicated in many diseases, including cancer. The phenomenon, called protein methylation, has added a new dimension to our understanding of how genes and other aspects of the cell are regulated, explained principal investigator Marcy L. Waters, professor of chemistry. Proteins are modified with these chemical tags, which in turn change their behavior in ways that are important for turning on or off their functions. The new tools will provide researchers with a map of these chemical tags and the patterns with which these tags decorate the surface of different proteins. A visual and/or chemical representation of these patterns may provide breakthrough insights into why certain cells become diseased while others stay healthy. Waters and her co-principal investigators, Drs. Brian D. Strahl and Xian Chen, also plan to use these new tools to pinpoint precisely which molecular interactions within cells break down and lead to disease. This could open the door to the development of highly specific and targeted therapies. Read the full article at: http://uncnews.unc.edu/content/view/5829/71/

New findings from the Carter lab challenge assumptions about origins of life.

Before there was life on Earth, there were molecules. At some point a few specialized molecules began replicating. This self-replication, scientists agree, kick-started a biochemical process that would lead to the first organisms. But exactly how that happened, how those molecules began replicating, has been one of science’s enduring mysteries. Research from the Carter lab, which appeared in the September 13th issue of the Journal of Biological Chemistry, offers an intriguing new view on how life began. The study leaves open the question of exactly how those primitive systems managed to replicate themselves — something neither the RNA World hypothesis nor the Peptide-RNA World theory can yet explain. Read the full article at: http://www.med.unc.edu/biochem/news/new-findings-from-the-carter-lab-challenge-assumptions-about-origins-of-life
**UNC researchers find promising new angle for drugs to prevent stroke and heart attack.**

Platelets, which allow blood to clot, are at the heart of numerous cardiovascular problems, including heart attacks and stroke. New research from the Parise lab (lead author, Stephen Holly, PhD) has uncovered a key platelet protein that could offer a new angle for developing drugs to prevent thrombosis, or dangerous blood clots, in patients at high risk of a cardiac event. The study was published online on August 29th ahead of print in the journal *Chemistry & Biology*. This new knowledge of platelets’ natural “on-off” switches could be exploited to develop drugs that keep platelets from forming pathological blood clots. As a next step, the researchers hope to investigate the proteins’ roles in preclinical animal models.

Read the full article at:

**UNC researchers identify cellular distress signal.**

Researchers from the Dohlman lab discovered that a well-known associate of G protein-coupled receptors -- a common target of FDA-approved drugs -- may play a critical role in mounting a rescue effort to avert an intracellular meltdown. G protein-coupled receptors serve as middlemen in the constant and essential communication between cells and their environment. They can detect chemical and sensory cues -- familiar hormones and neurotransmitters like dopamine, histamine, and adrenaline and environmental signals like odors, taste and light -- and then activate responses to those stimuli within the cell. In this study, published August 15th in *Molecular Cell*, Dohlman and his collaborator Dan Isom, PhD, investigated whether G protein-coupled receptor pathways could also sense a change in pH. The researchers believe that understanding this process could lead to more effective interventions for illnesses that are characterized by cellular stress, such as diabetes, stroke, heart attack, trauma, and cancer.

Read the full article at:

**NIH and UNC Researchers Define Role of Protein Vinculin in Cell Movement.**

In a paper published July 8th in the *Journal of Cell Biology*, Sharon Campbell, PhD and Clare Waterman, PhD at the NIH showed that cell mobility occurs through the interactions between the protein vinculin and the cytoskeletal lattice formed by the protein actin. By physically binding to the actin that makes up the cytoskeleton, vinculin operates as a type of molecular clutch transferring force and controlling cell motion. Since vinculin can associate with a number of distinct proteins, Campbell and her lab (co-author Peter Thompson) designed specific vinculin variants that disrupted its ability to bind actin, in an effort to tease out the role of an interaction deemed critical for vinculin function. These impaired vinculin molecules were used by the Waterman group to show that interaction between actin and vinculin is required for proper development of cellular components and coupling of adhesions to actin, which are critical for the process of controlled cell movement.

Read the full article at:

![Diagram of cellular distress signal](image1.png)

![Diagram of vinculin in cell movement](image2.png)
**Researchers in the Strahl lab identify another piece of the "histone code" puzzle.**

DNA is often called the blueprint of life, but the four-letter combinations that make up the genetic code are just part of the story. Research from the Strahl lab (lead author Scott Rothbart, PhD) has shown how a protein called UHRF1 “reads” the histone code in a specific way to perform an important cellular function. The research appeared the June 1st issue of *Genes and Development*, where the authors hypothesized that distinct combinations of histone modifications work together to form a code, akin to the classic genetic code, in which three-letter combinations of nucleotides make an amino acid. These histone modifications – chemical changes like phosphorylation, acetylation and methylation – generate an epigenetic language that is interpreted through the ability to recruit proteins to DNA and histones that in turn modulate cellular functions.

Read the full article at:

---

**UNC researchers engineer 'protein switch' to dissect role of cancer’s key players.**

Based on research published online and ahead of print March 18th in the *Proceedings of the National Academy of Sciences*, researchers in the Dokholyan lab have “rationally rewired” some of the cell’s smallest components to create proteins that can be switched on or off by command. These “protein switches” can be used to interrogate the inner workings of each cell, helping scientists uncover the molecular mechanisms of human health and disease. Working both in cultured human cells and in the model organism zebrafish, the researchers showed that turning on Src causes the cell to extend its edges as part of cell movement. Researchers in the Dokholyan lab plan to look at a variety of other kinases to understand their roles in the development, progression, and spread of cancer.

Read the full article at:

---

Visit our website for more news:
www.med.unc.edu/biochem

Have news to share? Email us at:
bcbp_web@med.unc.edu
# HONORS & AWARDS

## FACULTY

<table>
<thead>
<tr>
<th>Name</th>
<th>Award/Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wolfgang Bergmeier, PhD</td>
<td>BACH Investigator Recognition Award from ISTH Associate Editor for Thrombosis &amp; Research</td>
</tr>
<tr>
<td>Charlie Carter, PhD</td>
<td>Jour of Biological Chemistry Podcast Interview</td>
</tr>
<tr>
<td>Jean Cook, PhD</td>
<td>UNC Associate Dean of Graduate Education</td>
</tr>
<tr>
<td>Henrik Dohlman, PhD</td>
<td>Assoc Editor for Journal of Biological Chemistry ASBMB Profile Highlight, JBC Podcast Interview</td>
</tr>
<tr>
<td>Brian Kuhlman, PhD</td>
<td>Promoted to Full Professor</td>
</tr>
<tr>
<td>Leslie Parise, PhD</td>
<td>Chair Pub Affairs Advisory Committee for ASBMB</td>
</tr>
<tr>
<td>Gwen Sancar, PhD</td>
<td>UNC Academy of Educators Fellow</td>
</tr>
<tr>
<td>Lucia Stefanini, PhD</td>
<td>AHA Ken Brinkhous Young Investigator Prize</td>
</tr>
<tr>
<td>Greg Wang, PhD</td>
<td>UNC Jefferson-Pilot Fellowship</td>
</tr>
<tr>
<td>Qi Zhang, PhD</td>
<td>Basil O' Connor Award from March of Dimes</td>
</tr>
</tbody>
</table>

## STUDENT

<table>
<thead>
<tr>
<th>Name</th>
<th>Award/Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Justin Black</td>
<td>AHA Graduate Fellowship</td>
</tr>
<tr>
<td>Jaime Campbell</td>
<td>UNC Dissertation Completion Award       Diane Harris Leadership &amp; Service Award</td>
</tr>
<tr>
<td>Cassandra Hayne</td>
<td>NSF Graduate Fellowship               Department Student President               Dept Graduate Professional Student Rep</td>
</tr>
<tr>
<td>Tim Jacobs</td>
<td>Department Retreat Best Student Poster</td>
</tr>
<tr>
<td>Keith Miller</td>
<td>Diane Harris Leadership &amp; Service Award</td>
</tr>
<tr>
<td>Stephani Page</td>
<td>ASBMB Science Profile Highlight         Nature Blog’s Soapbox Science feature</td>
</tr>
<tr>
<td>Eliza Peterson</td>
<td>UNC Graduate Education Impact Award</td>
</tr>
<tr>
<td>Karen Plevock</td>
<td>Department Student President</td>
</tr>
<tr>
<td>Rebecca Pollet</td>
<td>NSF Graduate Fellowship</td>
</tr>
<tr>
<td>Peter Thompson</td>
<td>Department Retreat Best Student Talk</td>
</tr>
<tr>
<td>Seth Zimmerman</td>
<td>Department Retreat Best Student Poster</td>
</tr>
</tbody>
</table>

## POSTDOCS

<table>
<thead>
<tr>
<th>Name</th>
<th>Award/Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yacine Boulaftali, PhD</td>
<td>UNC McAllister Heart Institute Sabine Award ISTH Junior Investigator Travel Award</td>
</tr>
<tr>
<td>Marino Convertino, PhD</td>
<td>Department Retreat Best Postdoc Poster</td>
</tr>
<tr>
<td>Shobhan Gaddameedhi, PhD</td>
<td>UNC Postdoctoral Award for Research Excellence UNC CEHS Pilot Project Award NC TraCS Pilot Program Award NIH K99 Award</td>
</tr>
<tr>
<td>Harsha Gunawardena, PhD</td>
<td>Department Retreat Best Postdoc Talk</td>
</tr>
<tr>
<td>Scott Rothbart, PhD</td>
<td>UNC Postdoctoral Award for Research Excellence UNC Pagano Award for Best Research Paper FASEB Pincus Award American Cancer Society Fellowship</td>
</tr>
<tr>
<td>Dileep Varma, PhD</td>
<td>NIH K99 Award</td>
</tr>
</tbody>
</table>

## STAFF

<table>
<thead>
<tr>
<th>Name</th>
<th>Position/Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amanda Chang</td>
<td>UNC Employee Forum Representative</td>
</tr>
<tr>
<td>Marsha Lynn Ray</td>
<td>Department Staff Member of the Year</td>
</tr>
</tbody>
</table>
MEET THE NEW Students

2013-2014 Class Presidents

Cassandra Hayne (Kehler Lab)
Karen Plevocek (Gleb Lab)

STUDENT DEFENSES

Lauren Mitchell, Campbell lab
January 8, 2013

Ozlem Arat, Griffith lab
March 15, 2013

Sarah Clement, Dohlmans lab
March 22, 2013

Shen Shen, Asokan lab
March 26, 2013

Eliza Peterson, Singleton lab
April 25, 2013

Natasha Strande, Ramsden lab
June 18, 2013

Keith Miller, Collins lab
June 20, 2013

Rachael Baker, Dohlmans lab
June 24, 2013

Leanna McDonald, Lee lab
June 28, 2013

Bryan Der, Kuhlman lab
September 24, 2013

Rachel Creager-Allen, Bourret lab
October 1, 2013

Aaron Hobbs, Campbell lab
October 25, 2013

Bezly Groh, Xiong lab
November 8, 2013

Daud Cole, Jarstfer lab
December 3, 2013

Rachel Redler, Dokholyan lab
December 6, 2013

Read more about our new student welcome on page 13
A look at what some of our alum are doing

Cynthia Bradham, PhD
Year Graduated: 1998
Advisor: David Brenner
Current Position: Assistant Professor of Biology at Boston University

Jon Edwards, PhD
Year Graduated: 2012
Advisor: Matthew Redinbo
Current Position: Consultant at Cleaview Health Partners

Brant Hamel, PhD
Year Graduated: 2010
Advisor: John Sondek
Current Position: Regulatory Coordinator at Duke Cancer Institute

Eddie Bondo, M.S
Year Graduated: 2005
Advisor: Aziz Sancar
Current Position: Research Scientist at Syngenta Biotechnology

Christopher Fleming, PhD
Year Graduated: 2007
Advisor: Matthew Redinbo
Current Position: Research Scientist at Syngenta

Jennifer Isaacs, PhD
Year Graduated: 1997
Advisor: Bernard Weissman
Current Position: Associate Professor at Medical University of S. Carolina

Sarat Chandarlapat, PhD
Year Graduated: 1998
Advisor: Beverly Errede
Current Position: Assistant Professor, Sloan Kettering Cancer Center

Monica Frazier, PhD
Year Graduated: 2012
Advisor: Matthew Redinbo
Current Position: Postdoctoral Fellow at NIEHS

Michael Johnson, PhD
Year Graduated: 2011
Advisor: Matthew Redinbo
Current Position: Postdoctoral Fellow at St. Jude’s Children’s Hospital

Ying Cui, PhD
Year Graduated: 2013
Advisor: Brian Kuhlman
Current Position: Postdoctoral Fellow in the Voigt Lab at MIT

Michele Gauger, PhD
Year Graduated: 2007
Advisor: Aziz Sancar
Current Position: Patent Litigation Associate at Weil, Gotshal & Manges

Michelle Kimple, PhD
Year Graduated: 2003
Advisor: John Sondek
Current Position: Assistant Professor of Medicine at University of Wisconsin, Madison

www.med.unc.edu/biochem/people/alumni/student-alumni
A look at what some of our alum are doing

Charlie Lewis, PhD
Year Graduated: 1977
Advisor: Richard Wolfenden
Current Position: Adjunct Research Asst Professor, UNC-Chapel Hill

Jennifer Moore, PhD
Year Graduated: 2001
Advisor: William Marzluff
Position: Assoc. Director of the NIMH Stem Cell Center at Rutgers

Shantanu Sharma, PhD
Year Graduated: 2009
Advisor: Nikolay Dokholyan
Current Position: Lead Scientist at General Electric, Global Research

Lee Limbird, PhD
Year Graduated: 1973
Advisor: Karl Blau
Position: Dean of Natural Sciences, Mathematics, and Business at Fisk Univ

Alex Schlesinger, PhD
Year Graduated: 2011
Advisor: Gary Pielak
Current Position: Formulation Chemist at Syngenta

Carol Thompson, PhD
Year Graduated: 2003
Advisor: Carol Thompson
Position: Scientific Program Manager at Allen Institute for Brain Science

Chad McCull, PhD
Year Graduated: 2007
Advisor: Yue Xiong
Position: Hematopathology Fellow at Johns Hopkins Hospital

Ralf Schmid, PhD
Year Graduated: 2000
Advisor: Patricia Maness
Current Position: Research Associate at UNC-Chapel Hill

Jialiang Wang, PhD
Year Graduated: 2005
Advisor: Wendell Yarbrough
Current Position: Assistant Professor at Vanderbilt University

Timothy Megraw, PhD
Year Graduated: 1993
Advisor: Chi-Bom Chae
Current Position: Associate Professor, Florida State University School of Medicine

Ozdemirhan Sercin, PhD
Year Graduated: 2011
Advisor: Aziz Sancar
Current Position: Postdoctoral Fellow at Universite de Bruxelles

Michael Whitfield, PhD
Year Graduated: 1999
Advisor: William Marzluff
Current Position: Associate Professor of Genetics at Dartmouth Geisel School of Medicine

www.med.unc.edu/biochem/people/alumni/student-alumni
### TUESDAY SEMINAR SERIES

#### 2013 SPRING SEMINARS

**TUESDAYS at 11:00 AM**

<table>
<thead>
<tr>
<th>Date</th>
<th>Speaker</th>
<th>Affiliation</th>
<th>Title</th>
<th>Host</th>
</tr>
</thead>
<tbody>
<tr>
<td>JANUARY 8</td>
<td>ART PALMER, COLUMBIA UNIVERSITY</td>
<td>&quot;A tale of two enzymes: Protein dynamics and activity of ribonuclease H and A42&quot;</td>
<td>Bioinformatics 1131</td>
<td>Qi Zhang</td>
</tr>
<tr>
<td>JANUARY 22</td>
<td>ANASTASSIA ALEXANDROVA, UCLA</td>
<td>&quot;Metalloenzyme evolution through multi-scale dynamics modeling&quot;</td>
<td>Bioinformatics 1131</td>
<td>N. Dokholyan</td>
</tr>
<tr>
<td>JANUARY 29</td>
<td>HENG ZHU, JOHNS HOPKINS UNIVERSITY</td>
<td>&quot;From protein phosphorylation to DNA methylation: the power of protein microarrays&quot;</td>
<td>Bioinformatics 1131</td>
<td>Xian Chen</td>
</tr>
<tr>
<td>FEBRUARY 5</td>
<td>CECILIA CLEMENTI, RICE UNIVERSITY</td>
<td>&quot;A multiscale approach to characterize macromolecular dynamics and functions&quot;</td>
<td>Bioinformatics 1131</td>
<td>N. Dokholyan</td>
</tr>
<tr>
<td>FEBRUARY 12</td>
<td>MICHAEL HARRIS, CASE WESTERN UNIVERSITY</td>
<td>&quot;Elucidating the mechanisms and transition states of RNA transphosphorylation reactions in solution and in enzyme active sites&quot;</td>
<td>Bioinformatics 1131</td>
<td>Bill Marzluff</td>
</tr>
<tr>
<td>FEBRUARY 27</td>
<td>TODD YEATES, UCLA</td>
<td>&quot;Natural and engineered protein cages: structure, function, and frameworks for synthetic biology&quot;</td>
<td>Bioinformatics 1131</td>
<td>Matt Redinbo</td>
</tr>
<tr>
<td>MARCH 5</td>
<td>CHRISTOPH GRUNDNER, SEATTLE BIOMED</td>
<td>&quot;Profiling ATP binding in mycobacterium tuberculosis: from annotation to pathogenesis&quot;</td>
<td>Bioinformatics 1131</td>
<td>Saskia Neher</td>
</tr>
<tr>
<td>MARCH 12</td>
<td>SAMUEL WILSON, NEHS</td>
<td>&quot;Crystallographic snapshots reveal new intermediates during DNA synthesis&quot;</td>
<td>Bioinformatics 1131</td>
<td>Jack Griffith</td>
</tr>
<tr>
<td>MARCH 19</td>
<td>STEPHEN DEMAREST, ELI LILLY</td>
<td>&quot;The Emerging Landscape of Antibody and Antibody-Like Therapeutics&quot;</td>
<td>Bioinformatics 1131</td>
<td>Brian Kuhlman</td>
</tr>
<tr>
<td>MARCH 26</td>
<td>RAY TRIEVEL, UNIVERSITY OF MICHIGAN</td>
<td>&quot;Structure and Function of Protein Methyltransferases and Demethylases&quot;</td>
<td>Bioinformatics 1131</td>
<td>Brian Strahl</td>
</tr>
<tr>
<td>APRIL 2</td>
<td>CHARALAMPOS KALODIMOS, RUTGERS UNIVERSITY</td>
<td>&quot;Dynamic activation of protein function&quot;</td>
<td>Bioinformatics 1131</td>
<td>Andrew Lee</td>
</tr>
<tr>
<td>APRIL 9</td>
<td>DIANE BARBER, UCSF</td>
<td>&quot;Considering Protonation as a Posttranslational Modification: From Molecules to Cell Behaviors&quot;</td>
<td>Bioinformatics 1131</td>
<td>Henrik Dohlman</td>
</tr>
<tr>
<td>APRIL 16</td>
<td>RICHARD BRENNAN, DUKE UNIVERSITY</td>
<td>&quot;Structural Insights into Hfq-RNA Interaction&quot;</td>
<td>Bioinformatics 1131</td>
<td>Leslie Parise</td>
</tr>
<tr>
<td>APRIL 23</td>
<td>DANIEL RALEIGH, STONY BROOK UNIVERSITY</td>
<td>&quot;Pancreatic Amyloid: From Basic Biophysics to Inhibitor Design&quot;</td>
<td>Bioinformatics 1131</td>
<td>Brian Kuhlman</td>
</tr>
<tr>
<td>APRIL 30</td>
<td>LAURA LANDWEBER, PRINCETON UNIVERSITY</td>
<td>&quot;RNA-mediated epigenetic inheritance&quot;</td>
<td>Bioinformatics 1131</td>
<td>Charles Carter</td>
</tr>
</tbody>
</table>

Contact – Rhonda Scott (rhonda.squires@med.unc.edu, 919-843-9886)

---

### 2013 FALL SEMINARS

**TUESDAYS @ 11:00 AM**

<table>
<thead>
<tr>
<th>Date</th>
<th>Speaker</th>
<th>Affiliation</th>
<th>Title</th>
<th>Host</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEPTEMBER 3</td>
<td>BRIAN STRAHL, UNC Biochemistry and Biophysics</td>
<td>&quot;Cracking the 'histone code' - new lessons learned from UHRI1&quot;</td>
<td>Bioinformatics 1131</td>
<td>Leslie Parise</td>
</tr>
<tr>
<td>SEPTEMBER 10</td>
<td>WOLFGANG BERGMEIER, UNC Biochemistry and Biophysics</td>
<td>&quot;Controlling platelet activation in health and disease: Rap GTPase signaling takes center stage&quot;</td>
<td>Bioinformatics 1131</td>
<td>Leslie Parise</td>
</tr>
<tr>
<td>SEPTEMBER 17</td>
<td>NIKOLAY DOKHOLYAN, UNC Biochemistry and Biophysics</td>
<td>&quot;Understanding the etiology of the Lou Gehrig’s disease&quot;</td>
<td>Bioinformatics 1131</td>
<td>Leslie Parise</td>
</tr>
<tr>
<td>SEPTEMBER 24</td>
<td>LINDA WORDEMAN, University of Washington</td>
<td>&quot;A link between tumor suppressors, microtubule dynamics and chromosome instability&quot;</td>
<td>Bioinformatics 1131</td>
<td>Mike Coplow</td>
</tr>
<tr>
<td>SEPTEMBER 27</td>
<td>BARRY STODDARD, Fred Hutchinson Cancer Ctr</td>
<td>&quot;Structure, mechanism and engineering of TAL effectors and homing endonucleases for gene targeting&quot;</td>
<td>Bioinformatics 1131</td>
<td>Brian Kuhlman</td>
</tr>
<tr>
<td>OCTOBER 1</td>
<td>LIN-FENG CHEN, University of Illinois</td>
<td>&quot;Epigenetic regulation of NF-kappaB signaling in Cancer and Immunity&quot;</td>
<td>Bioinformatics 1131</td>
<td>Greg Weng</td>
</tr>
<tr>
<td>OCTOBER 22</td>
<td>DAVID HARRIS, Boston University</td>
<td>&quot;The Prion Protein: A Dual Role in Prion and Alzheimer's Diseases&quot;</td>
<td>Bioinformatics 1131</td>
<td>Leslie Parise</td>
</tr>
<tr>
<td>OCTOBER 29</td>
<td>SARAH HYMOWITZ, Genentech</td>
<td>&quot;The structure of the BRAF-MEK complex reveals a catalysis-independent role for BRAF in MAPK pathway activation&quot;</td>
<td>Bioinformatics 1131</td>
<td>Sharon Campbell</td>
</tr>
<tr>
<td>NOVEMBER 5</td>
<td>PAUL WADE, NEHS</td>
<td>&quot;Gene regulation by chromatin&quot;</td>
<td>Bioinformatics 1131</td>
<td>Greg Weng</td>
</tr>
<tr>
<td>NOVEMBER 12</td>
<td>CAROL HALL, NC State University</td>
<td>&quot;Spontaneous formation of oligomers and fibrils in large scale molecular dynamics simulations of peptides&quot;</td>
<td>Bioinformatics 1131</td>
<td>Nikolay Dokholyan</td>
</tr>
<tr>
<td>DECEMBER 3</td>
<td>GERRNAD MEISSNER, UNC Biochemistry and Biophysics</td>
<td>&quot;Loss of calsequestrin inhibition ofryanodine receptor promotes cardiomyopathy and heart failure&quot;</td>
<td>Bioinformatics 1131</td>
<td>Leslie Parise</td>
</tr>
</tbody>
</table>
SUMMER SEMINARS

May 21, 2013
Justin Black (Parise Lab)
"CIB1-an integrin binding protein"

Tishan Williams (Carter Lab)
"Biochemical and structural analysis of human mitochondrial TrpRS"

May 28, 2013
Alakananda Das (Slep Lab)
"Role of Che-12 in primary cilium assembly/maintenance"

Yunnus Annayev (Sancar Lab)
"Characterization of a new circadian clock protein (Gm129)"

June 04, 2013
Onur Dagliyan (Dokholyan Lab)
"Manipulation of protein activity in living cells using a designed protein switch"

Suzy Lynch (Superfine Lab)
"A vertical clearance model to define the mechanisms behind mucociliary clearance and interactions"

Learn more about seminars & events at: www.med.unc.edu/biochem/events

SIPS
Science in Progress Seminars

January 10: Yanbao Yu, PhD and Xian Chen, PhD (Chen Lab)
February 14: Joseph Harrison, PhD and Matthew O’Meara (Kuhlman Lab)
February 28: Dileep Varma, PhD and Lindsay Rizzardi (Cook Lab)
March 14: Mike Slevin, PhD and Ivan Sabath (Marzluff Lab)
March 28: Michael Emanuele, PhD and Rhaguvar Dronamraju, PhD
April 25: Adam Roberts (Redinbo Lab) and Andrew Monteith (Vilen Lab)
May 9: Subir Biswas, PhD and Kinshuk Srivastava, PhD (Lentz Lab)

PUBLIC LECTURE ON SCIENCE OF THE 2013 NOBEL PRIZE IN PHYSIOLOGY OR MEDICINE & CHEMISTRY

“Vesicle Trafficking: Multiple Roads Converge in a Major Discovery”

Patrick Brennwald, PhD,
Professor, Department of Cell Biology & Physiology

AND

“How Molecules Move, and Why that is Important”

Jan Hermans, PhD,
Professor Emeritus, Department of Biochemistry & Biophysics

November 14
4:00 PM
G202 MBRR

Gerald Crabtree, MD
HHMI Investigator
Prof. of Pathology & Developmental Biology
Stanford University, School of Medicine

Dr. Crabtree has been a faculty member at Stanford since 1985 and with HHMI since 1987. He was inducted into the National Academy of Science in 1997 and is a Fellow of the American Association for the Advancement of Science.

Biochemistry & Biophysics Student Invited Distinguished Lecture

“CHROMATIN REGULATION: NEW METHODS AND CONCEPTS”

Wednesday, April 10
4:00 – 5:00 PM
BIOINFORMATICS 1131

Hosted by Students of Biochemistry and Biophysics
In conjunction with the Carolina Biosciences Alumni Reunion, which occurred May 16-18, 2013, the department hosted an Alumni Research Day on Thursday, May 16th featuring talks, posters, and panel discussions from our alumni and current students. Our keynote alumnus talks featured Lee Limbird, PhD (Dean of Natural Sciences, Mathematics, and Business at Fisk University) and Sylvie Doublié, PhD (Professor of Microbiology and Molecular Genetics at the University of Vermont). We invited current and former members of the department to participate in the research day and it turned out to be a great time of science exchange, networking, and reconnecting with our alums. We look forward to having similar events in the future.

Learn more at the event website: [http://www.med.unc.edu/biochem/2013-alumni-research-day](http://www.med.unc.edu/biochem/2013-alumni-research-day)
Surprise Ann!

On July 17th, department faculty surprised Ann Erickson, now an Emeritus Professor of Biochemistry & Biophysics, at the NC Botanical Gardens with a farewell party to commemorate her retirement. The event was also attended by Ann’s family. As a customary parting gift for faculty, the department bestowed Ann with a hand-crafted, winged back chair (made of cherry with black enamel) engraved with her name and years of service.

Ann officially retired on July 1, 2013 after 27 years of service at UNC. Her research efforts were focused on cellular biochemistry and the trafficking of proteins in the endosomal system.

Throughout her tenure at UNC, Ann was active in several campus wide committees, mentored trainees, and notably taught in the graduate level course CBIO 643 “Supercell” – all the while maintaining a successful research program.

The department will greatly miss her presence, knowledge, and collaborative spirit.

1969 - 1971 Assistant for Research, Rockefeller University
1972 - 1977 Mount Sinai Medical Center Graduate Fellow
1977 - 1981 Postdoctoral Fellow, Rockefeller University
1978 - 1980 U.S. Public Health Service Postdoctoral Fellow, Rockefeller University
1981 - 1983 Research Associate, Rockefeller University
1983 - 1986 Assistant Professor, Rockefeller University
1986 - 1993 Assistant Professor, Department of Biochemistry and Biophysics, UNC
1986 - 2013 Member, Program for Molecular Biology and Biotechnology
1993 - 2005 Associate Professor, Department of Biochemistry and Biophysics, UNC
1994 - 1997 Cell Biology Review Panel, National Science Foundation
1995 - 1998 Adjunct Member, Graduate Faculty in Cancer Biology, Wayne State University
2005 - 2013 Professor, Department of Biochemistry and Biophysics, UNC
July 1, 2013 Emeritus Professor, Department of Biochemistry and Biophysics, UNC
Each year, the department hosts a new student welcome event to introduce incoming graduate students to their fellow cohorts, and meet our faculty and staff. On July 23rd, we combined the event with the presentation of the Diane Harris Leadership Awards. The department created the award in honor of Diane Harris, former student services manager, who retired in 2007 after 20+ years of dedicated and loyal service. Each year faculty nominate graduating student(s) who demonstrate exemplary public service as doctoral students and peerleadership qualities. Keith Miller (biochemistry student in Ed Collins lab) and Jaime Campbell (biophysics student in Kevin Slep's lab) were the selected winners for 2013. Keith defended his thesis this summer and is currently an assistant professor of chemistry and biochemistry at the University of Mount Union in Alliance, Ohio. Jaime plans to defend her thesis in May 2014 and was also a recent recipient of UNC Graduate School’s Dissertation Completion Award. Throughout their time as graduate students, Jaime and Keith have been generous with their time and effort with student recruitments, volunteering to organize and lead student events and activities, and overall, just exemplary department citizens and most deserving of recognition. Congratulations to them both!

Upcoming Graduate Student Events:

Come enjoy catered coffee, tea, and bagels while catching up with your fellow graduate students. These events will alternate between the Genome Sciences Building (GSB) and Genetic Medicine Building (GMB) to maximize involvement from all students in the department.

January 10, 2014  
February 7, 2014  
March 7, 2014  
April 10, 2014  
May 2, 2014

View details online at: http://www.med.unc.edu/biochem/events/student-events
The department hosted a campus wide event for the Center of Structural Biology this fall to highlight the core facility services offered through the center. A large vendor show was also featured. Learn more about the center: www.med.unc.edu/csb.
On November 19th, we held our on campus research retreat at the Kenan Center and had another well-attended and successful event; many thanks to everyone who participated. The day was filled with great talks from our students, postdoctoral fellows, and research staff and faculty, with an especially energetic keynote talk by Dorothy Erie, UNC Professor of Chemistry, entitled “Fun with AFM, single-molecule fluorescence and DNA repair.” During the packed poster session and social, trainees and researchers from the department also gave engaging poster presentations on their current work (see the winners on the next page). During every retreat, attendees receive a uniquely designed item to commemorate their experience. At recent events, t-shirts have been given out, but members of the planning committee decided to let attendees choose either a ceramic or travel mug printed with the design as their gift this year. As a bonus, a flash-drive with our logo was included.
We have Joshua Kelley, postdoctoral fellow from the Dohlman lab, to thank for his creative design (pictured on the bottom right of the collage on the previous page). As a prize for winning the design contest, Josh received both types of mugs with his printed design and a $50 gift certificate to Top of the Hill. Congrats and thanks Josh!

Attendees of the retreat also vote for the best talks and posters. This year’s winners are pictured below with Jean Cook who presented their award certificates, with the exception of Harsha who is pictured with Xian Chen and Leslie Parise. Congrats and thanks to all for their great presentations!

Lastly, we acknowledge the retreat planning committee for making it happen (Jean Cook, Saskia Neher, Wolfgang Bergmeier, Hayretin Yumerefendi, Cassandra Hayne, Justin Black) with onsite help of the retreat staff (Linda Burns, Amanda Chang, Susan Huey, and Rhonda Scott). Learn more at the event website: http://www.med.unc.edu/biochem/retreat-2013

SAVE THE DATE

We are returning to the beach for our next off campus research retreat!

Dates
OCTOBER 3-5, 2014

Location
Holiday Inn, Sunspree Resort
Wrightsville Beach, NC
In Memoriam

Holiday Reception
A great night of food, drink, games, and connecting with friends and colleagues. Happy Holidays!

Thanks to the planners: Lynn Ray, Jesse Arp, Scott Rothbarl, Cassandra Hayne, Michael Lafferty

John Sheehan, PhD

We are deeply saddened by the passing of Dr. John Sheehan, Michael Hooker Distinguished Professor of Biochemistry and Biophysics at UNC Chapel Hill and member of the UNC Cystic Fibrosis Center. Dr. Sheehan peacefully passed in his home on February 4, 2013.

Dr. Sheehan had an active mind and imagination. Over the course of his career, he pioneered the use of light scattering, electron microscopy, mass spectrometry, and the quartz crystal microbalance with dissipation to help resolve some of the many complexities of his beloved molecules. He mentored more than a dozen students over the course of his career. Located on multiple continents, several of these scientists are established leaders in the field and continue his legacy. Though he left us as a relatively young man, he fulfilled his dream of leaving his UNC colleagues “…in good mucus shape!”

www.med.unc.edu/biochem/people/faculty/in-memoriam