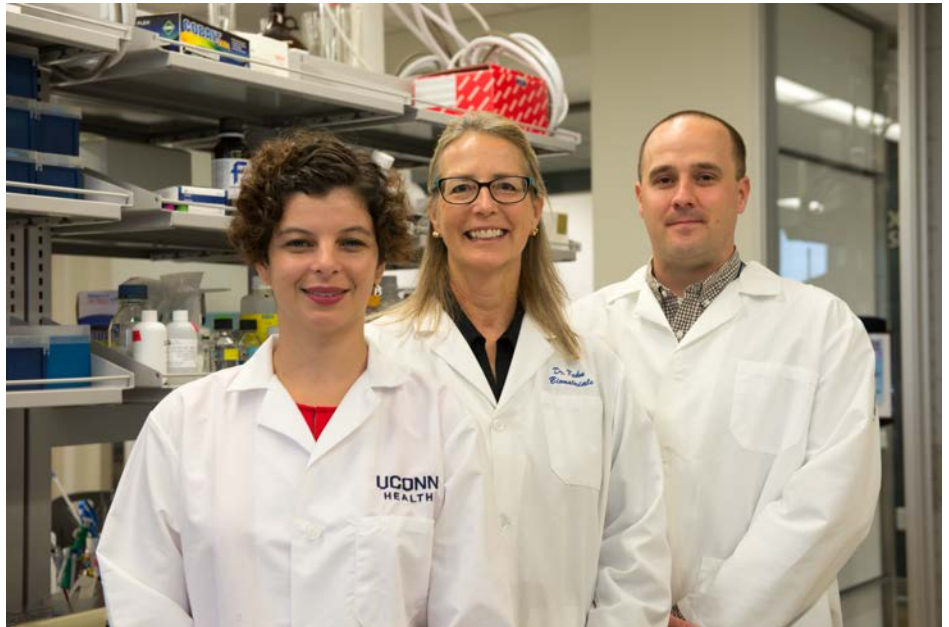


UCH Department of Biomedical Engineering Takes Shape

As part of the \$1.7B *Next Generation Connecticut* and the \$1B *Bioscience Connecticut* investments and a new *Academic Plan: Path to Excellence*, UConn has elevated Biomedical Engineering from a program within the School of Engineering to department status within three schools at UConn: School of Engineering, School of Dental Medicine and School of Medicine. Biomedical Engineering has 33 faculty members

<https://www.bme.uconn.edu/faculty-staff/core-faculty>) on both the Storrs and Farmington campuses, under the overarching leadership of Professor Ki Chon, PhD, head of BME. Liisa Kuhn, PhD serves as Associate Head of BME at UConn Health and Jon Goldberg, PhD is the Associate Head of Graduate Education for BME at UConn Health. Over the past year, three new BME faculty members have been hired within the School of Dental Medicine, Assistant Professor Alix Deymier, and Associate Professor Tannin Schmidt are now here; Assistant Professor Kshitiz will start in January, 2018. UCH BME offices and labs are on the 7th floor in the newly renovated lab space. The



Drs. Alix Deymier, Liisa Kuhn & Tannin Schmidt

Biomedical Engineering Department seeks to provide students with the fundamental knowledge and skills needed to excel in the integration of science, engineering, and medicine to improve the quality of life and to become leaders in biomedical engineering. Two additional tenure-track faculty are now being recruited. Please contact the chair of the search committee, Dr. Jon Goldberg, if you have any suggestions for possible recruits. Look out for seminars being offered by our new BME faculty to learn more about collaboration opportunities.

IN THIS ISSUE

STUDENT SPOTLIGHT	5	RESEARCH RESOURCES	6
FACULTY ACCOMPLISHMENTS	7	UPCOMING EVENTS	8
FUNDING OPPORTUNITIES	9	RESEARCH DEAN'S CORNER	11

UCH BME Department Leadership



Ki Chon, PhD

Professor and Head, Department of Biomedical Engineering (Storrs/UCH)

Research in Dr. Chon's laboratory involves medical instrumentation, biosignal processing, modeling, simulation and development of novel algorithms to understand dynamic processes and extract distinct features of physiological systems. Currently, there are six research projects ongoing in his laboratory:

- Evaluation of the effects of oxygen toxicity and hyperbaric environments on the autonomic nervous system
- Real-time detection of atrial fibrillation, atrial flutter and atrial tachycardia from surface ECG
- Spatio-temporal analysis of renal autoregulation
- Noninvasive assessment of diabetic cardiovascular autonomic neuropathy (DCAN) from surface ECG or pulse oximeter
- Vital sign monitoring from optical recordings with a mobile phone
- Wearable devices for vital sign monitoring



Liisa T. Kuhn, PhD

Associate Professor, Department of Biomedical Engineering

Associate Head of BME at UCH

Dr. Kuhn's laboratory works at the interface of materials science and medicine. We use biological and engineering techniques to investigate bone regeneration after delivery of growth factors and stem cells from biomaterial scaffolds. We also study nanoparticle delivery of chemotherapy using calcium phosphate-based biomaterials that may one day be used to minimize painful and debilitating side effects of anti-cancer therapies.

Dr. Kuhn's research spans fundamental studies to translational research. She has an expertise in drug delivery and conducting in vitro and in vivo studies that she gained while working in industry and at UConn Health. The Kuhn Lab's mission is to use biomaterial technologies to develop better treatments for damaged or diseased tissue, particularly in the elderly.

She received her undergraduate degree in Mechanical Engineering at Duke University and worked at General Dynamics in San Diego, CA before completing her MS and PhD in Materials Engineering at the University of California Santa Barbara. Dr. Kuhn held postdoctoral positions at Case Western University and Harvard Medical School/Boston Children's Hospital, conducting biomineralization studies and orthopedic research. She joined the faculty at UConn Health after co-founding and selling a start-up company in Boston, MA that developed bone graft substitutes.

**A. Jon Goldberg, PhD**

Professor, Department of Biomedical Engineering

Associate Head of Graduate Education, BME at UCH

Dr. Goldberg received his BS in Metallurgical Engineering from Drexel University and PhD in Metallurgical Engineering & Dental Materials from the University of Michigan. The latter was a combined degree program between the School of Engineering and the School of Dentistry. Dr. Goldberg has been at the University of Connecticut School of Dental Medicine for over 30 years. He is now in the Department of Biomedical Engineering, but previously he has held his primary academic appointment in clinical departments where he successfully integrated basic materials science into clinical teaching and research. He has also been active at the UCONN School of Engineering where he has had funded research collaborations, occasionally teaches and has served on the Advisory Committee to the Institute of Materials Science. Dr. Goldberg currently chairs the faculty search committee for the Department of Biomedical Engineering at UConn Health. Dr. Goldberg was an original member and served for 9 years on the Board of Directors of the University of Connecticut Health Center and served on the University Academic Vision Committee. Dr. Goldberg is currently co-Director of the NIH-sponsored T-90 training grant; with Dr. Mina Mina as PI. Dr. Goldberg's research interests focus on the development of new dental materials, studies of structure-property relationships and more recently biomaterial-cell interactions. The work on new materials has involved titanium alloys for orthodontic application, fiber-reinforced composites (FRC) for various dental clinical applications and biocatalyzed mineralization. Much of this work was NIH-funded and successfully translated to clinical practice.

UCH BME – New Faculty

**Tannin A. Schmidt, PhD**

Associate Professor, Department of Biomedical Engineering

Dr. Schmidt spent 9 years at the University of Calgary prior to joining UCH, jointly appointed in the Faculty of Kinesiology and the Schulich School of Engineering, recently as a Tier II Canada Research Chair Biomedical Engineering - Biomaterials. He received his BAsC in Engineering Science from the University of Toronto, his MS and PhD in Bioengineering from the University of California San Diego, and did post-doctoral training in Biochemistry at Rush University Medical Centre (Chicago). His research interests in bioengineering lie within biomaterials and biotherapeutics, biomechanics, biotribology, and biochemistry. He focuses on articular cartilage and ocular surface lubrication, as well as orthopaedic and ophthalmic biomaterial development and characterization for the treatment of diseases. He is also a co-founder of Lubris BioPharma, LLC, a clinical stage biotech startup commercializing the use of recombinant human lubricin for the treatment of arthritis, dry eye, and other diseases. Novartis recently exercised an option to in-license recombinant human lubricin for ophthalmic indications worldwide (outside Europe) including the treatment of dry eye.



Alix Deymier, PhD

Assistant Professor, Department of Biomedical Engineering

Dr. Deymier is interested in studying the role of mineral composition, structure, and organization on the mechanics of mineralized biological tissue especially in the context of acid-base interactions in the body. Her interests focus on how pH modifying pathologies such as acidosis and unloading can affect bone structure and function at the nano-, micro- and macro-scales. She was previously a postdoctoral fellow in Orthopedic Surgery at Columbia University and Washington University where she had an NSBRI fellowship studying the role of mineral structure and organization on the mechanics of biological systems in microgravity. She obtained her Ph.D. in Materials Science and Engineering at Northwestern University where she was a NDSEG and NSF Graduate Fellow working with High Energy X-ray Diffraction to study load transfer and mineral structure in mineralized biological systems. She completed her B.S. in Materials Science and Engineering at the University of Arizona in 2006 with a specialization in spectroscopy and the science of cultural heritage materials.



Kshitiz, PhD

Assistant Professor, Department of Biomedical Engineering (effective January, 2018)

Dr. Kshitiz received his B.Tech. in Computer Science and Engineering from Indian Institute of Technology, Mumbai. He received his Ph.D. in Biomedical Engineering at the Johns Hopkins School of Medicine.

Subsequent to his dissertation, Kshitiz served as an interim acting Chief Scientific Officer of Cardiac Mimetics, Inc., a startup company at the Center for Commercialization at the University of Washington, Seattle. After his stint at UW, Kshitiz joined Yale as an Associate Research Scientist at the Institute of Systems Biology where he developed methods to fundamentally understand cell-cell communication.

Dr. Kshitiz's laboratory focuses on mechanistically understanding intercellular communication in various physiological contexts, with a particular focus on cell-cell interactions within the tumor microenvironment.

Drs. Kuhn, Deymier and Schmidt



Jumana Alhamdi, BME PhD student in the Kuhn lab, Drs. Schmidt, Deymier and Kuhn





HINMAN STUDENT RESEARCH SYMPOSIUM



Congratulations to **Bailey Proft** (mentor: Dr. Tadinada), a 3rd year dental student and recipient of the 2017 Student Research Day Dean's award, and **Lauren Gormer** (mentor: Dr. Kuhn), a 3rd year dental student, who will both represent UConn SDM at the 23rd annual Hinman Student Research Symposium held November 3-5, 2017 in Memphis, TN.



Congratulations to **Chidinma Okafor** (mentors: Drs. Tadinada & Arteaga), a 2nd year dental student, who completed her summer research with the Global Health & International Studies program in the Dominican Republic.



ADA Foundation®



Congratulations to **Candice Logan**, (mentors: Drs. Yadav & Tadinada), a 3rd year dental student, who recently represented UConn SDM at the 53rd annual Colgate Dental Students Conference on Research, October 1-3, 2017, held at the ADA Foundation Research Center in Gaithersburg, MD.



Congratulations to **Bailey Proft**, (mentor: Dr. Tadinada) a 3rd year dental student who recently presented her research at the American Academy of Implant Dentistry conference held October 11-14, 2017 in San Diego, CA.



Congratulations to **Emily Keller**, (mentor: Dr. Tadinada), a 2nd year dental student who recently completed her summer research with the Global Health & International Studies program in Guatemala.



Congratulations to the following 3rd year dental students who will be presenting their research at the Greater New York Dental Meeting to be held on November 26, 2017:

Laura Doherty (mentor: Dr. Sanjay), **Lauren Gormer** (mentor: Dr. Kuhn), **Triny Gutierrez** (mentor: Dr. Yadav), **Willan Jumbo** (mentors: Drs. Uribe & Yadav), **Candice Logan** (mentors: Drs. Yadav & Tadinada), and **Bailey Proft** (mentor: Dr. Tadinada).



Congratulations to the SDM faculty, post docs and students who recently presented at the American Society for Bone and Mineral Research Annual Meeting which was held September 8-11, 2017 in Denver, CO:

Mariangela Basile (mentor: Dr. Kalajzic)

Henry Hrdlicka (mentor: Dr. Delany)

Dr. Marja Hurley

Dr. Ivo Kalajzic

Dr. Peter Maye

Patience MeoBurt (mentor: Dr. Hurley)

Dr. Sanja Novak (mentor: Dr. Kalajzic)

Dr. David Rowe

Ryan Russell (mentor: Dr. Maye)

Tulika Sharma (mentor: Dr. Maye)

Xi Wang (mentor: Dr. Kalajzic)

Dr. Xiaonan Xin

Dr. Natalie Wee (mentor: Dr. Kalajzic)

Research Resources

Pre-submission Reviews of Grant Proposals

UConn has a contract with a research consulting firm called Hanover Research. They provide a range of services including pre-submission reviews of grant proposals and helping faculty incorporate feedback for resubmission. They work on one project at a time for the University so requests are prioritized based on strategic needs and deadlines. SDM faculty are encouraged to consider applying to utilize their services.

If interested, please email Dr. Lalla at Lalla@uchc.edu, well in advance of your submission deadline.



Statistical Support for Dental Residents in Masters programs:

Chia-Ling Kuo, PhD

Assistant Professor

Biostatistics Center, CICATS

kuo@uchc.edu

Phone: 679-2897



Student Poster Competition

Submission Deadline: Monday, November 13, 2017

Contact Dr. Tadinada for specific submission instructions. Pre-doctoral and Post-doctoral poster presentations will be held at the Boston Convention Center on Saturday, January, 27, 2018. Forward your completed abstract and one page registration form to Dr. Tadinada prior to the November 13th deadline.

For more info visit: <http://www.yankeedental.com>

Faculty Achievements



Congratulations to **Dr. Ivo Kalajzic** on his recent NIAMS supplement STAR award:

<https://www.niams.nih.gov/newsroom/announcements/niams-awards-four-supplements-advance-research-star-projects-programs>

Dr. Kalajzic was also recognized for the STAR award by the American Association of Bone and Mineral Research:

http://www.asbmr.org/Publications/News/NewsDetail.aspx?cid=ada6d9e5-8beb-40c9-9f95-fab019f29f6f&utm_source=ASBMR+2017+e-News+List&utm_campaign=d66464946b-September+28+e-News&utm_medium=email&utm_term=0_c35b5c9b70-d66464946b-182497969#.Wc5NWEJd1ZF



Congratulations to **Dr. Brya Matthews** who was recently recognized by the American Society for Bone and Mineral Research as a 2017 Rising Star Award Recipient.

<https://www.asbmr.org/Publications/News/NewsDetail.aspx?cid=a6913126-b369-4255-9e66-b1337a816475#.WfDp4bG-LYp>



Dr. Alix Deymier was the speaker at our October 16, 2017 SDM Research Seminar. Her presentation was entitled, "Small Structures Big Effects: Multiscale Structure-Function Relationships in Musculoskeletal Tissues."



Have you received a recent award, accomplishment or have some interesting news to share with our SDM Research Community?

Please forward your news to Laura Didden or Lisa Ramsdell so it may be included in an upcoming newsletter.

SDM Research Seminars



Dr. Ernst Reichenberger

“Genetic background of pathologic keloid scarring”

Date: Thursday, November 30, 2017

Time: 12:00 – 1:00

Room: L-7040



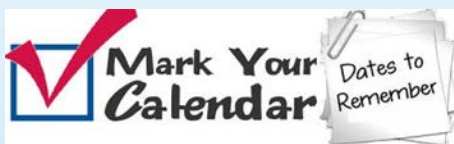
Dr. Tannin Schmidt

“Boundary Lubricating Properties (and More) of PRG4 / Lubricin on Articular Cartilage, the Ocular Surface, and Other Biomaterials and Biointerfaces”

Date: Thursday, December 7, 2017

Time: 12:00 – 1:00

Room: L-7040



Medical/Dental Student Research Day will be held on Monday, February 26, 2018 in the Rotunda. Please mark your calendars to attend this important event to support our students.

Look for additional event information which will be posted in the coming months!



Funding Opportunities

RESEARCH EXCELLENCE PROGRAM – UCONN HEALTH

October 2, 2017

In partnership with the School of Medicine (SOM) and School of Dental Medicine (SODM), The Office of the Vice President for Research (OVPR) is pleased to announce the 2017-2018 **Research Excellence Program (REP)** for the Storrs / Regional Campuses and for UConn Health.

The primary goal of the Research Excellence Program is to provide seed funding to fuel innovative research, scholarship, and creative endeavors with strong potential for:

- ▶ Significant extramural funding from federal sponsors, corporations, industry partners, and foundations
- ▶ Achievements consistent with the highest standards of accomplishment in the discipline.



UConn Health Research Excellence Program (UCH-REP)

- ▶ The UCH-REP is provided through a partnership between the OVPR and the Schools of Medicine (SOM) and Dental Medicine (SODM). Three categories of competitive awards are available.
 - ▶ **Stimulus** provides up to \$25,000 in seed / project completion funding. Four to eight Stimulus awards are expected.
 - ▶ Single-PI projects permitted
 - ▶ **Convergence, Level 1** provides 3-4 awards between \$50,000 and \$75,000 for interdisciplinary projects.
 - ▶ **Must include collaborations across at least two different disciplinary areas**
 - ▶ **Convergence, Level 2** provides two awards between \$76,000 and \$100,000 for interdisciplinary projects.
 - ▶ **Must include collaborations across at least three different disciplinary areas**

REP Submission Deadline – All categories: Full proposals must be received by 12/15/2017.

Note: Projects with cross-campus Co-PIs must choose to be part of **either** the Storrs or UCH competitions, not both. UCH faculty must have an active UConn NetID to submit proposals.

For further information, contact: research@uconn.edu or call 860-486-6378.

STUDENT TRAINING AND RESEARCH (STAR) NETWORK
 IMPLANTOLOGY EVIDENCE-BASED DENTISTRY NETWORK
Colgate is proud to announce our Research Grant Program
 Are you a junior faculty in the first five years of initial academic appointment in the US or Canada looking for funds to support your research project?
 STUDENT TRAINING AND RESEARCH (STAR) NETWORK
 DENTAL MATERIALS
 CRANIOFACIAL BIOLOGY
 GLOBAL ORAL HEALTH INEQUALITIES RESEARCH NETWORK
 DIAGNOSTIC SCIENCES
C.A.R.E PROGRAM
 COLGATE AWARD FOR RESEARCH EXCELLENCE
RESEARCH GRANTS FOR EARLY CAREER FACULTY BY Colgate
 NETWORK FOR PRACTICE-BASED RESEARCH
 ORAL HEALTH RESEARCH
 MICROBIOLOGY/IMMUNOLOGY
 DENTAL ANESTHESIOLOGY RESEARCH NUTRITION RESEARCH
 BEHAVIORAL, EPIDEMIOLOGIC AND HEALTH SERVICES RESEARCH
 E-ORAL HEALTH NETWORK
 SUBMIT YOUR PROJECT TO COLGATE C.A.R.E PROGRAM
 For more information and application instructions
 Please Visit
 www.colgateprofessional.com/research
 or email us at: careprogram@colpal.com
CLINICAL AWARD FOR RESEARCH EXCELLENCE
 FOR U.S.A. www.colgatecareus.com · FOR CANADA www.colgatecare.ca

The Colgate CARE Program was created for faculty in their first 5 years of appointment to a dental school. Submission deadline for the Colgate CARE Program is November 22, 2017. Complete details may be found at: <https://www.colgateprofessional.com/research>

NIH funding Opportunities

Biology Of Aging Dental, Oral And Craniofacial Tissues (R01 - Clinical Trial Not Allowed)
[\(RFA-DE-18-009\)](#)

National Institute of Dental and Craniofacial Research

Application Receipt Date(s): January 31, 2018, by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on this date.

Biology Of Aging Dental, Oral And Craniofacial Tissues (R21 - Clinical Trial Not Allowed)
[\(RFA-DE-18-010\)](#)

National Institute of Dental and Craniofacial Research

Application Receipt Date(s): January 31, 2018, by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on this date.

Research Dean's Corner



Dear Colleagues,

In this issue of the SDM Research Newsletter, we profile the Department of Biomedical Engineering (BME) at UConn Health. This is a shared Department across three UConn Schools: Engineering, Medicine, and Dental Medicine, under the overall leadership of Dr. Ki Chon. The UCH BME Department offices and laboratories are located in the recently renovated SDM space on the 7th floor. SDM faculty Drs. Liisa Kuhn and Jon Goldberg are now appointed to leadership roles in the UCH BME Department. Three newly hired BME faculty have primary appointments in the SDM. Two additional research faculty hires are planned in the UCH BME department, also with primary appointments in the SDM. Thus, the establishment of the UCH BME department represents a significant expansion of research in the SDM. We are indeed fortunate to have this opportunity for research growth, thanks to support from Bioscience Connecticut and visionary leadership at the State, University, and School levels.

The SDM Research Office will provide all needed support to the UCH BME Department, including in preparation of grant applications. We will also work to promote research collaborations including the BME faculty. I look forward to the growth and success of this Department, which will further strengthen the research profile of our School.

Sincerely,

Rajesh V. Lalla, DDS, PhD

Associate Dean for Research

SDM – Research Office

263 Farmington Avenue

Farmington, CT 06030-3915

Dr. Rajesh Lalla - Associate Dean for Research

Dr. Effie Ioannidou - Director, Dental Clinical Research Center

Dr. Aditya Tadinada - Director of Student Research

Office Staff:

Laura Didden and Lisa Ramsdell