Bjorn R. Olsen, MD, PhD, Receives Funding from Boehringer Ingelheim Pharmaceuticals, Inc.

Dr. Bjorn R. Olsen, professor of developmental biology and dean for research at HSDM, and Harvard Medical School Hersey professor of cell biology, received funding from Boehringer Ingelheim Pharmaceuticals, Inc. for his project, “Testing of procedures to prevent BMP-induced heterotopic ossification in mice.” Olsen is collaborating with Samuel I. Stupp, PhD, Professor of Materials Science, Chemistry, and Medicine at Northwestern University’s Department of Chemical and Biological Engineering.

Anne Tanner, PhD Receives IADR Distinguished Scientist Award

Dr. Anne Tanner, associate professor of oral medicine, infection and immunity at HSDM, and senior member of the staff at The Forsyth Institute, has joined the prestigious ranks of the International Association for Dental Research (IADR) Distinguished Scientists. She was recently awarded the IADR Distinguished Scientist Award in Research in Dental Caries. Tanner was recognized for her innovative series of studies on the microbiota associated with early childhood cavities.

Tanner has an outstanding background in oral microbiology in the areas of taxonomy and periodontal research, in addition to cariology. She was trained an anaerobic microbiologist in periodontology and has maintained an active role in anaerobic microbiology as lead or co-investigator in several taxonomy studies. In addition to her distinguished accomplishments in research, Tanner has served as a mentor to many in the field. She has shared her passion for research and her collaborative spirit with national and international scientists and clinicians. Throughout her successful career, Tanner has taken an interdisciplinary approach integrating public health, clinical research and basic science.

Anne Tanner, PhD, receives the 2016 IADR Distinguished Scientist Award in Research Caries from Mark Heft, DMD, PhD, the ninety-second President of the IADR.

Save the Dates for HSDM’s Sesquicentennial Celebration

March 22-25, 2017
IADR General Session and Reception in San Francisco, CA

April 19-20, 2017
HSDM Research Day, Research Symposium, Giddon Lecture and Goldhaber Award in Boston, MA

May 4-5, 2017
Gala at Harvard Art Museums in Cambridge, MA Educational Summit in Boston, MA

Details and additional events to follow!
Celebrating Three Women Scientists at HSDM

By Joshua Chou, PhD

HSDM’s excellence in research is supported by a number of pioneering leaders guiding the next generation of researchers. For this piece, Dr. Joshua Chou, postdoctoral fellow in oral medicine, infection and immunity, interviewed three developing female scientists, Drs. Yi Fan, Xuchen Duan, and Pei Ying Ng.

Yi Fan, DDS,
an HSDM Dean’s Scholar, Endocrine Society Early Young Investigator, and ASBMR Young Investigator, represents the embodiment of research excellence at HSDM. With no signs of slowing down, those who know her, anticipate seeing how this young woman will pioneer the future of clinical dental research.

As a child, Yi Fan knew that she wanted to become a dentist. But what is her secret to success and what motivates her? Yi Fan’s research at HSDM is focused on mineral ion homeostasis and bone development. She received her DDS from West China School of Stomatology, Sichuan University, majoring in Endodontics. Her enthusiasm for pursuing research started during her clinical intern years where she observed many patients with Amelogenesis Imperfecta and joined a specialized research team investigating the potential role of miRNA in ameloblast differentiation.

Yi Fan was inspired by a presentation from Dr. Beate Lanske, professor of oral medicine, infection and immunity at HSDM, and applied for a position in her Lab in 2013. “I believe my success here at HSDM is due to Beate’s guidance and valuable support from her Lab. The research here gives me freedom to explore different areas including age-related osteoporosis, chronic kidney disease, and hyperparathyroidism. This has undoubtedly expanded my vision and experience.”

Yi Fan plans to return to West China School of Stomatology to establish her own laboratory where access to patients will allow her to continue her research in developing therapies for bone and tooth ailments. When asked what motivates her, Fan states, “I am very fortunate to have fearless female leaders guiding me throughout my career. I believe to be successful in research you must have passion. Work hard and don’t give up. Be sincere and honest and remain steadfast and you will achieve greatness.”

Xuchen “Aimee” Duan, MS, PhD, an HSDM Dean’s Scholar, exemplifies the qualities of a successful researcher. One only needs to speak with her to see that her confidence is evident and her conviction is clear. Aimee’s skills and knowledge are an inspiration to those around her, while her commitment to research is felt by anyone who works with her.

At a young age, Aimee was intrigued by medicine, in particular diseases. After obtaining her undergraduate degree in biological sciences in China, Aimee’s research career started the Utrecht University in the Netherlands, where she received her Master’s degree in pharmaceutical sciences. She went on to complete her PhD in orthopaedic surgery at the University of Oxford, where her research was on the physiological and biological mechanisms of bisphosphonate action.

Seeking to expand her knowledge in basic research, there was no better place and mentor than in the Lab of Dr. Bjorn R. Olsen, dean for research and professor of developmental biology at HSDM, and Harvard Medical School Hersey professor of cell biology. Her research has led to a number of publications in high-impact journals (Development and Matrix Biology) and her recent work is on the evaluation of potential new drugs to treat patients with heterotopic ossification. She attributes her success to her mentors and the research environment here at HSDM.

Aimee plans to join the pharmaceutical industry in the future. “I’ve always known that I would work in industry, especially with my pharmaceutical background. Having come to HSDM and expanding my research portfolio, I feel that I am better prepared now. I like the industry culture of working in teams towards a specific vision and goal and I envision myself to be in a leadership role in the future.”
Pei Ying Ng, PhD, a dedicated researcher fueled by her passion in medical research, became a postdoctoral fellow in the Baron Lab after completing her PhD from the Center of Orthopedic Research at the University of Western Australia. Her research unveiled a previously unrecognized role for the dynactin motor complex in osteoclast formation and function, which resulted in more than seven publications and awards including the Australian and New Zealand Bone and Mineral Society Visual Science Award and the New Investigator Award from the Department of Health. Pei Ying Ng is intrigued by how osteoclasts takes on different morphologies during their life cycle, making them very challenging cells to work with, especially when imaging them.

To further advance into this area of research, she was introduced to Dr. Roland Baron, chair and professor of oral medicine, infection and immunity at HSDM, and professor of medicine at Massachusetts General Hospital Division of Endocrinology, an expert on osteoclast formation and function. Under the guidance of Dr. Baron and in collaboration with the Wyss Institute, Pei Ying Ng has applied the latest in ultra-resolution microscopy, DNA-paint technology, to unveil how osteoclast fusion factors drive its function. The key advantage of DNA-paint technology is it allows the user to stain the same cells with multiple antibodies at the same time. This allows Pei Ying Ng the ability to image different stages of the osteoclast fusion process.

Her work represents the multidisciplinary nature of the HSDM research environment and the cutting-edge science being conducted here. Furthermore, her research combines the elegance of basic science with the art of imaging. Pei Ying Ng has yet to decide on what the future holds for her, but remains focused and dedicated in following her passion in research.

**Research Honors & Awards**


Yi Fan, DDS, postdoctoral fellow in the Lanske Lab, has been selected as a “2016 Outstanding Postdoctoral Fellow” from the HMS/HSDM Office of Postdoctoral Fellows. Honorees are nominated by the HMS/HSDM basic science departments to honor the achievements of some of the most exceptional postdoctoral research fellows.

Dr. Vicki Rosen, professor and chair of developmental biology at HSDM, received NIH-NIAMS R13 funding to support the 11th International BMP Conference. This conference, organized by Dr. Rosen, will bring together investigators who are leaders in a variety of interconnected and interrelated disciplines essential for a comprehensive and encompassing study and understanding of the BMP signaling axis in development, disease, and regeneration.

Dr. Beate Lanske, professor of oral medicine, infection and immunity at HSDM, received NIH-NIDDK R56 bridge funding for her project, “PTH resistance and marrow adipogenesis.”

Dr. Hend Alqaderi, lecturer in the department of oral health policy and epidemiology at HSDM, was appointed Head of the Kuwaiti Graduate Research Group in the United States.
New Postdoctoral Fellows and Visiting Scholars at HSDM

Dr. Hidemichi Kihara is from Iwate, Japan, and received his PhD in dental implantology and regenerative medicine from the Tokyo Medical and Dental University, where he worked on maxillofacial anatomy and reconstruction. In the Nagai Lab, Kihara is a postdoctoral fellow in restorative dentistry and biomaterials sciences, working on developing a metal surface technology to engraft type 1 collagen fiber onto a biocompatible metal surface in the perpendicular dental implant and gingival ligament, as well as in and bone and muscle.

Dr. Yuchen Liu is from Nanjing, China and received his PhD degree in biology from Nanjing University, where he worked on small RNA in extracellular vesicles. In the Yang Lab, Liu is a postdoctoral fellow in developmental biology, working on investigating the role of Gs signaling pathway in skin setting and bone marrow stem cells.

Dr. Mengrui (Mona) Wu is from Hangzhou, China and received her PhD degree in molecular biology from Zhejiang University. Wu worked on osteoclast biology with Dr. Yi-Ping Li at the University of Alabama for her PhD work. In the Baron Lab, Wu is a postdoctoral fellow in oral medicine, infection and immunity, working on the regulation and crosstalk of Hippo signaling and Wnt signaling in bone.

Dr. Prem Swaroop Yadav is from Varanasi India and received his PhD degree in developmental biology from The Indian Institute of Technology. Yadav worked on mouse transgenesis with Dr. Shinichi Aizaw at the Riken Centre for Developmental Biology in Japan. Yadav then worked on high-throughput RNA sequencing analysis with Dr. Jørgen Kjems at the Interdisciplinary Nanoscience Center at Aarhus University in Denmark. In the Yang Lab, Yadav is a postdoctoral fellow in developmental biology, working on exploring the role of Wnt/PCP signaling pathways during development of skeletal tissues.

Kun Chen is from Luan, China and is a third-year PhD student studying orthopedics at Tongji Medical College. Chen joined the Baron Lab in oral medicine, infection and immunity, at HSDM as a joint PhD student, sponsored by the Chinese Scholarship Council. Chen is working on Wnt signaling, the role of Sfrp4 in the regulation of skeletal homeostasis.

Dr. Marie Courbebaisse is from Paris, France and received her MD degree from Clermont-Ferrand I University School of Medicine, and her PhD in Physiology and Physiopathology from Paris VI University. Courbebaisse is a Nephrologist and an associate professor at Paris Descartes University and at the Renal Physiology department of the European Georges Pompidou Hospital with fields of interest in mineral metabolism, vitamin D and nephrolithiasis. In the Lanske Lab, Courbebaisse is a visiting scientist in oral medicine, infection and immunity investigating how PTH regulates renal calcium reabsorption using a unique mouse model.

Dr. Du Feng is from China, and received his PhD degree in cell biology and biophysics from Tsinghua University in Beijing, China, where he worked on mitophagy and autophagy. In the Whitman Lab, Feng is a postdoctoral fellow in developmental biology, working on identification of the novel components of GCN1 complex in anti-inflammatory response by a traditional Chinese medicine halofuginone.
HSDM PUBLICATIONS

DEVELOPMENTAL BIOLOGY


MULTI-DEPARTMENTAL


ORAL HEALTH POLICY AND EPIDEMIOLOGY


RESTORATIVE DENTISTRY AND BIOMATERIALS SCIENCES


Continued on Page 6
**ORAL AND MAXILLOFACIAL SURGERY**


**ORAL MEDICINE, INFECTION AND IMMUNITY**


