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Edison Biotechnology Institute Newsletter

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# Edison Biotechnology Institute

Summer Edition

May - August 2016

## New Members of EBI

Written By: Emily Leber

EBI members have increased over the summer. The new members are working all over the building, from the lab of Dr. Dhiraj Vatter, Professor of Nutrition and Director of the School of Applied Health Sciences and Wellness, which is located in the basement, to the lab of Dr. Shiyong Wu, Director of EBI and Professor of Chemistry and Biochemistry whose lab is located on the first floor, to the lab of Dr. John Kopchick, Distinguished Professor and Eminent Scholar, located on the second floor. With so many new faces, there are bound to be new revelations at EBI.

Dr. Vatter is a Professor of Nutrition and the new Director of the School of Applied Health Sciences and Wellness. Dr. Vatter's research focuses on utilizing natural

products to advance human health with an emphasis on chronic metabolic and inflammatory diseases, such as Alzheimer's. In addition, his laboratory also studies the role of gut microbiome on human health, especially, obesity, cardiovascular disease and diabetes.

Priscilla Pham, a graduate student of Dr. Vatter, is a Research Associate finishing her PhD in the field of human gut microbiota and obesity. Her research focuses specifically on the strain-specific effects of *Bifidobacterium* species on the expression and activity of angiopoietin-like 4, a protein involved in fat metabolism.

In Dr. Wu's lab, we have Veronica Bahamondes. Veronica came from Chile, moving to Athens to be with her husband who has been working at OU for three years. In coming here, Veronica decided to continue her studies, and she started by looking at the different professors and their areas of interest in research. Veronica found Dr. Wu, Director of EBI, which aligned with her Master's of Cellular and Molecular Biomedicine from the University of Chile. Veronica began working with Dr. Wu this semester as a student and is working towards her PhD researching "ER stress sensor PERK and UV". Veronica's hope is to stay here until she completes her PhD and then return to Chile.

Dr. Christoffer Sondergaard works in Dr. Kopchick's lab as a Postdoctoral Fellow, studying growth hormones and diseases that are caused by inflammation. Dr. Sondergaard came here from Denmark because the project he was working on there is similar to the project he gets to work on here. Sondergaard came to Athens in June and began his position here in July. His goal is to finish up the project here and return to Denmark after half a year.

Lastly, Dr. Chasity Andrews, is one of the newest employees at EBI and works as a Research Scientist as part of our Natural Products Research Group. Dr. Andrews came to Athens from New York City where she was most recently working at a start-up biotechnology company. Prior to that she was working at the Aaron Diamond AIDS Research Center, researching long-acting molecules for HIV prevention. Dr. Andrews' said the biotechnology aspect of EBI fits well with her background. She enjoys the contrast of Athens compared with New York City and all of the outdoor opportunities.

There are a lot of new faces and new perspectives at EBI. We look forward to all of the new ideas to come.

Dr. Dhiraj Vattem



Priscilla Pham



Veronica Bahamondes



Dr. Christoffer Sondergaard





## EBI Promotions

Written By: Emily Leber & Rachel Beha

Here at EBI, two members were recently promoted. These two have both been here for a while and have been given promotions for the work that they are doing. Those two members are Lingying Tong and Reetobrata Basu.

Lingying came from Hong Kong, joining EBI as a graduate student in 2009. Lingying obtained her undergraduate degree in Hong Kong and came to America to live with her aunt, who works at a different OU campus. After getting her PhD, Lingying decided to stay here and was hired as a Postdoctoral Fellow for Dr. Shiyong Wu, Director of EBI. After one year as a Postdoctoral Fellow, Lingying was promoted to Assistant Investigator which took effect July 1, 2016. Also in 2016, Lingying's grant proposal was funded through the American Cancer Society, which is a great accomplishment. Lingying does lab research by exposing skin cells to UV light. This research will help determine mechanisms of developing skin cancer and possibly help prevent skin cancer in the future. In relation to Ohio University, Lingying enjoys Athens because it is very peaceful. Lingying grew up in a crowded city that often had traffic jams, which is much different than Athens. Although Lingying does not have a preference on where she is, city and state wise, she does enjoy being in Athens, Ohio.

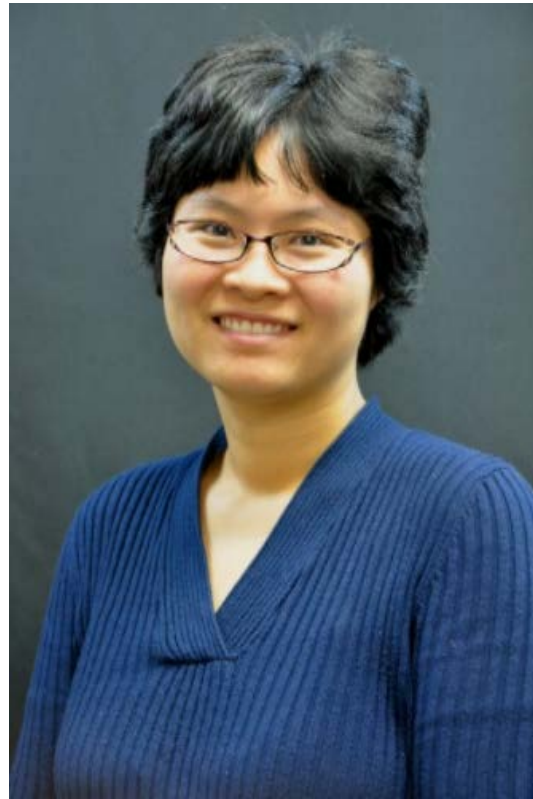
Reetobrata Basu is now a member of EBI, working as a Postdoctoral Fellow in the lab of Dr. John Kopchick, Distinguished Professor and Eminent Scholar. Coming to Ohio University from India, Reetobrata found out about EBI through a paper written by Dr. Kopchick on his developing cancer research. After reading the paper, Reetobrata was intrigued and discovered a project he could work on at EBI to expand on Dr. Kopchick's work. Reetobrata has a PhD in biomechanics and is now mentoring three students, to help with his journey to becoming a professor. Reetobrata has

made many advancements in his career at EBI, he started out working here as a student and is now a Postdoctoral Fellow and expects to publish his research soon.

Dr. Reetobrata Basu



Dr. Lingying Tong



## Innovation Corps@OHIO

Written By: Xuan Wang



Stephen Bergmeier, PI



Xiao Chen, Co-PI



Xuan Wang  
Entrepreneurial Lead



Emily Trzeciak  
Entrepreneurial Lead



Paul Kilzer  
Mentor Lead



Lee Groeschl  
Exec. Mentor

Dr. Xiaozhuo Chen and Dr. Stephen Bergmeier's research teams, together with three other Ohio University research teams, were selected for the second I-Corps@Ohio cohort. The Innovation Corps (I-Corps)@Ohio is a seven-week program designed to help students and faculty determine if their innovations have market potential. During I-Corps@Ohio, the Ohio University teams joined 20 other teams representing universities from across the state. Teams received intense experiential learning in business modeling, commercial opportunities, product development, as well as \$15,000 to aid in their startups.

Dr. Chen, Associate Professor from EBI, has been working with Dr. Bergemeier from the Department of Chemistry on advanced anticancer drug development for many years. Their technology is a series of novel targeted therapeutic small molecules that show efficacy in several oncologic indications. With a novel mechanism of action, their therapeutic provides a new option for cancer treatment by targeting glucose transporter 1 (GLUT1), which is overexpressed in 90% of all cancer cases. As a novel targeted therapy, their compounds have large potential in increasing efficacy and reducing side effects.

The team also includes two entrepreneurial leads; Xuan Wang and Emily Trzeciak, and mentors; Mr. Paul Kilzer, Mr. Lee Groeschl, and Dr. Jeff Wiseman. After interviewing about 100 experts in cancer treatment and drug development from hospitals and pharmaceutical companies, the team validated the market potential and customer needs for their technology.

I-Corp@Ohio is sponsored by the Ohio Department of Higher Education (ODHE) and is modeled after the National Science Foundation's (NSF) successful I-Corps program, hoping to increase innovation, entrepreneurship, and industry collaboration.

## Dr. Genji Imokawa Visits EBI

Written By: Misako Hata

Dr. Genji Imokawa



Dr. Genji Imokawa, Ph.D, from the Research Institute for Biological Functions, Chubu University visited EBI from May 16th – 20th. He gave three lectures about molecular details of wrinkle formation resulting from sun radiation, antipigmentation agents, and epidermal cells and related diseases. During his stay in Athens, he spent the majority of his time with our EBI research groups sharing his knowledge and discussing potential collaborations.

Dr. Imokawa has spent more than 30 years researching at Kao, a famous cosmetic company, in Japan. He is the pioneer of skin science research, currently serving as the director and council member of numerous dermatology and cosmetic research societies. His scientific discoveries have led to commercial products devoted to tackle common cosmetic distress such as wrinkles, age spots and hair loss. During his stay, I, Misako Hata, was lucky to hear his inside stories about mechanism and efficacy of anti-aging compounds. I would like to restate in this article a couple of interesting key compounds.

**Ceramide (found in Curél Ceramide Care)**

Ceramides are the lipids existing in stratum corneum playing a role in retaining water, therefore keeping skin moisturized. Some facial cleansers can wash away ceramide causing dry irritated skin. Because of this, companies have developed facial cleansers that do not disturb the intact ceramides as well as face cream with ceramides to promote water retention and block the permeability.

**Chamomile extract (found in SOFINA® beauté by Kao corporation)**

The chamomile extract called chamomila ET, blocks early endothelin signaling cascades, which induce melanogenesis and later contribute to the hyperpigmentation induced by ultraviolet B.

Dr. Imokawa is very passionate about his research as well as his hobbies: tennis and golf. EBI lab rats, including undergraduate work-study students were battered and beaten by his stamina and tennis skills. I have to say, I was very impressed that Dr. Imokawa applied copious amounts of sunscreen with each visit to the tennis court (even to the indoor tennis court!). As I am entering middle age, I have decided to use sunscreen every time I am outside. Dr. Imokawa's research has clearly shown the biological mechanism of UV damage on skin and he is the living proof of young looking skin.

## **Dr. Jeff Wiseman Attended the 9th Joint Natural Products Conference**

Written By: Emily Leber

As part of the Innovation Strategy seed funding provided for the “Establishment of a Natural Products Center & Commercialization Platform”, Dr. Jeff Wiseman traveled to the 9th Joint Natural Products Conference of 2016. The Joint Natural Products Conference was a joint meeting of The Society for Medicinal Plant and Natural Product Research (GA), The American Society of Pharmacognosy (ASP), The Phytochemical Society of

Europe (PSE), Società Italiana di Fitochimica (SIF), Association Francophone pour l'Enseignement et la Recherche en Pharmacognosie (AFERP), The Japanese Society of Pharmacognosy (JSP) held in Copenhagen, Denmark from July 23-27.

Plants are of interest in pharmacology and treatment of disease because they manufacture biologically active molecules collectively referred to as plant metabolites. The metabolites are produced largely as a chemical defense against insects, fungi, and bacteria – and people – who want to use the plant as food, but they may also have desirable pharmacological effects in certain disease conditions. A major focus of the conference was identifying new metabolites and using them to explore new regions of “chemical space” in order to identify novel pharmacological activities. The meeting was also a resource to learn the state of the art in developing “fingerprints” based on the metabolite profiles for diverse plant species. These discussions are relevant to the recent legalization of marijuana and ongoing research efforts around how to enhance access to those metabolites responsible for the medical benefits of marijuana.

## Dr. Shiyong Wu's Travel for Collaboration

Written By: Emily Leber



Dr. Shiyong Wu, Director of EBI and Professor of Chemistry and Biochemistry, visited The University of Leipzig in Germany for two weeks this summer. The purpose for Dr. Wu's trip



was to teach two classes of bioanalytical chemistry as a part of OHIO-UL exchange program. During the visit, Dr. Wu also gave a seminar presentation about his research on chemoprevention of UVB-induced skin cancer and was able to discuss potential collaborations with Dr. Ralf Hoffmann at Center for Biotechnology and Biomedicine and with Dr. Wolf-Dietrich Einicke from the Institute of Chemical Technology.

While Dr. Wu was in Germany, he also had the opportunity to meet students who have been selected to come to OU this year and next year. Dr. Wu talked with these students in a session, explaining OU from his point of view and his experiences here. In addition, he had the opportunity to live in an apartment with a German student, which allowed him to experience the culture first hand.

## EBI is Growing in More Ways Than One

As EBI is growing with new members and new promotions, we also have some new family members. The youngest ones have just arrived and we are very happy to announce these little ones below.



Dad: Christoffer Søndergaard (Soendergaard)

Mom: Therese Juhlin Larsen

Baby: Clara Juhlin Soendergaard

Born: April 15th, 2016

Characteristics: Cute!



Dad: Kevin Funk

Mom: Lindsey Siegrist

Baby: Charles Ian Funk

Born: February 22nd, 2016

Characteristics: Happy and playful!



Mom: Rachel Beha

Dad: Bryan Beha

Baby: Jaxon James Beha

Born: June 25, 2016

Characteristics: Happy with a hint of feisty!

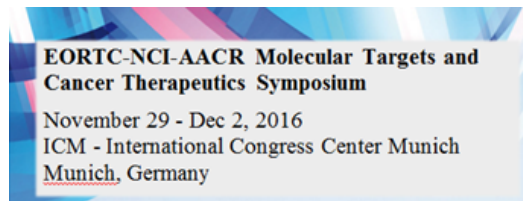
## Save the Date

By: Yanrong Qian

Click on each picture for more event details.

**THE 8<sup>th</sup> INTERNATIONAL  
CONGRESS OF THE  
GRS AND IGF SOCIETY**

**Tel-Aviv, Isreal  
Nov. 6-9**



**EXPLORE EBI**

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