

# THE UNIST JOURNAL

Volume. 8 | Feb 2014

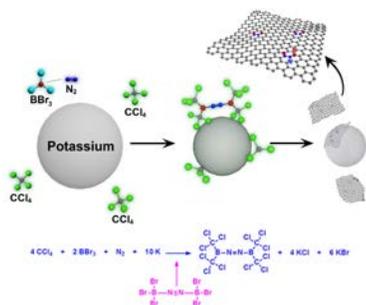
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## Another Graphene Breakthrough: UNIST Research Team Opens a Band-gap of Graphene



A UNIST research team led by Prof. Jong-Beom Baek discovered an efficient method for the mass production of boron/nitrogen co-doped graphene nanoplatelets (BCN-graphene) via a simple solvothermal reaction of  $\text{BBr}_3/\text{CCl}_4/\text{N}_2$  in the presence of potassium. This work is published in "Angewandte Chemie International Edition" as a VIP ("Very Important Paper").

A new synthetic protocol developed by research team in UNIST has revealed that boron/nitrogen co-doping is only feasible when  $\text{CCl}_4$  is treated with  $\text{BBr}_3$  together with nitrogen gas. "Although the performance of FET is not in the ranges of commercial silicon-based semiconductors, this initiative work should be the proof of new concept

and great leap forward to graphene with band-gap opening." excitedly said Prof. Jong-Beom Baek. "I believe this work is one of the biggest advancements in considering viability of a simple synthetic approach", said Ph.D. candidate Sun-Min Jung, the first author of this article. Prof. Baek explains the next step: "Now, the remaining challenge is fine-tuning band-gap to improve the on/off current ratio for real device applications." The colleague researchers are Profs. Joon Hak Oh, Noejung Park, HuYoung Jeong and 6 graduate students.

The research work was supported by Mid-Career Researcher (MCR), Basic Science Research (BSR), BK21 Plus, Converging Research Center (CRC), Basic Research Laboratory (BRL) and Global Research Fellowship programs funded by the National Research Foundation (NRF) of Korea, and the US Air Force Office of Scientific Research through the Asian Office of Aerospace R&D (AFOSR-AOARD).

Public Relations Team

## Prof. Jaephil Cho Received the '2013 Knowledge Creation Award'

Prof. Jaephil Cho of the Interdisciplinary School of Green Energy received the 2013 Knowledge Creation Award from the Korea Institute of Science and Technology Information (KISTI).

This award was established by KISTI to encourage preeminent elite scientists who publish highly cited scientific papers. The recipients of the 'Knowledge Creation Award' are selected through a quantitative information analysis method developed by KISTI.

Since the 2009 inaugural ceremony, thirty-one recipients have been selected, including two UNIST professors, Sang Hoon Joo and Jongnam Park in 2011.

This year, UNIST Prof. Jaephil Cho and nine other recipients were granted the 'Knowledge Creation Award' for their international academic achievements by KISTI and the Ministry of Science, ICT and the Future Planning of Korea.

Prof. Cho's research article published in *Angew. Chem. Int. Ed.*, 'Carbon-Coated Single-Crystal  $\text{LiMn}_2\text{O}_4$  Nanoparticle Clusters as Cathode Material for High-Energy and High-Power Lithium-Ion was



selected as one of 2012 Top Ten Science and Technology News and he also published an article in *Nature Communications*, too. ('Promotion of Oxygen reduction by a bio-inspired tethered iron phthalocyanine carbon nanotube-based catalyst')

Professor Jaephil Cho's research has been widely cited praised for its contribution to the development of secondary battery technology. He was also selected for the 2013 Incheon Award in Nature Science in September 2013.

Public Relations Team

## Constructing a New UI for UNIST



The second public hearing about constructing a new UI (University Identity) was held on the evening of Friday, November 29th in the main building of UNIST.

The purpose of the hearing was to reflect the decision-making process of all members of UNIST for the construction of the new UI. The first public hearing was already held, but did not fully reflect the members' comments due to the fall break. Sung-Hwan Kim, the student body president of UNIST, explained why the university held the second public hearing. It was judged that including the students' opinion in the process of selecting the new UI is an example of an active communication that should take place at the university. To improve the situation, this second more meaningful meeting was held.

UI consists of the university's word mark, emblem, mascots, brand slogan, and so on. Constructing a new UI is planned to commemorate the conversion from a university to an institute. If the conversion is ensured, the UI is likely to be changed in March.

The hearing consisted of an explanation of the progress by Jaeup Kim and a draft proposal by Yu-Jin Hwang. In addition, a variety of questions and answers, and a preference survey for the drafts was conducted.

The first part was addressed by Prof. Jae-Up Kim, Chairperson of Public Relations. He reported the overall progress of constructing a new UI. Interested parties at UNIST contracted with Interbrand, an American global branding consultancy. When drafts of the UI were completed, they wanted to reflect students' views. To gather more opinions, spreading the results through the internet was considered to be efficient. However, there were concerns about the risk of information leaks.

Next, Yu-Jin Hwang, a managing director of Interbrand, explained the process of developing UI. She accounted for and analyzed the brand slogan, emblem, and word mark of UNIST compared to other universities. By analyzing the features of UNIST, she showed four drafts of the emblem and word mark. She said that those drafts were enough to be considered by interested parties and completed through continuous studies. Diverse features were used to symbolize the characteristics of UNIST. For instance, an emblem was made utilizing nine stars. The nine stars represent the nine bridges that exist at UNIST and will be labeled with the names of UNIST students who contribute to making a

remarkable accomplishment such as winning the Nobel Prize. Therefore, the character is incorporated to two emblems but not chosen. The chosen feature consists of nine basic figures to emphasize an institute of technology because study of the institute begins from the basics. Also, more diverse colors were used in the new UI compared to the current one of purple, navy, and gray. The new brand slogan has been changed to 'First in Change' and the previous one is 'Over the MIT.'

Lastly, five drafts of mascots were shown, including three drafts offered by Interbrand and two drafts from a student design competition. A unicorn was utilized in most of the mascot designs because of the similarity of the pronunciation of 'uni' and judged to be appropriate for expressing features of UNIST.

Finally, students asked many in-depth questions about the new UI. Although there were not many students, the students participating in the hearing showed the spirit and passion of the university.

As a result, the fourth draft of the emblem was chosen by the students, professors, and experts who voted as representatives of UNIST. One of the mascots was chosen but deferred for use because of selecting better mascots in the future. The mascot is not yet available for viewing, but is expected to be unveiled in the near future.

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## Fulbright Grantee Chooses UNIST For His Research



Mr. Alan Filer, a Fulbright grantee and an undergraduate of Case Western Reserve University, has chosen UNIST to do his research at UNIST. He has been conducting research on graphene at UNIST since last August.

"I selected UNIST since it is one of the world-leading universities in the field of graphene research," said Mr. Alan Filer. He also added, "I was impressed by professor Jong-Beom Baek's outstanding research results on graphene and the state of the art research facilities that UNIST provides."

The Fulbright Program, including the Fulbright-Hays Program, is a program of highly competitive, merit-based grants for international educational exchange for students, scholars, teachers, professionals,

scientists and artists, founded by United States Senator J. William Fulbright in 1946. Under the Fulbright Program, competitively selected U.S. citizens may become eligible for scholarships to study, conduct research, or exercise their talents abroad and citizens of other countries may qualify to do the same in the United States.

The Fulbright Program is one of the most prestigious awards programs worldwide, operating in over 155 countries. Forty-five Fulbright alumni have won Nobel Prizes; seventy-eight have won Pulitzer Prizes. More Nobel laureates are former Fulbright recipients than any other award program. (cited from Wikipedia)

Public Relations Team

## UNIST Professor Gwanseob Shin, Selected for the BK21 PLUS Project

UNIST announced that the research team led by Prof. Gwanseob Shin, was selected for the BK21 PLUS project from the Ministry of Education and the National Research Foundation of Korea (NRF).

BK21 PLUS is a program that aims to revitalize education at the graduate level and enhance research competitiveness by supporting master's and Ph.D. students in science, technology, humanities, and the social sciences.

The research team of 'Strategic Program of Interdisciplinary Human & Systems Engineering for Technologically driven Human-Centered Factories of the Future' led by Prof. Gwanseob Shin, is aims to cultivate specialists in human-friendly manufacturing business and lead Ulsan's innovative manufacturing industries.

"Through convergence research and education of Human Engineering and System Engineering, we



will contribute to the development of a creative economy with advanced technology and high value-added manufacturing businesses."

The Ministry of Education has been selecting universities for the BK21 PLUS project, aiming to cultivate research-centered global universities, as well as professionals specialized in each academic field, as well as core technical areas, and convergence industry.

Public Relations Team

## Professor Rodney, S. Ruoff Appointed as Director of IBS Research Center



Professor Rodney S. Ruoff (School of Mechanical and Advanced Materials Engineering) has been appointed as one of the directors of IBS research centers on January 2nd, 2014.

Ruoff, a world-leading pioneer in graphene-based material, will conduct research on synthesis and properties of novel carbon materials as the research center director.

Professor Rodney S. Ruoff was a professor at The University of

Texas-Austin and is one of the world-leading scientists in the carbon material research areas. He is a fellow member of the American Institute of Physics, American Material Research Society and American Association for the Advancement of Science who greatly contributed in developing nano tube graphene and the relating new materials and new carbon materials.

Public Relations Team

## Fake It Till You Make It

Theresa Rah visits UNIST to give an inspirational lecture



Theresa Rah, well-known as the communication director of Pyeongchang 2018 Olympics and the Paralympic Winter Games Bid Committee, visited UNIST to share her experience and tips about speaking in public.

She started the lecture with a big smile, showing a picture of when she had her very first speech competition at her university. All the evidence to the contrary, she said that she had hated talking in front of a big audience. She shared her winning of the 5-minute speech contest and gave a tip that you not only need to know how to practice, but you also need to practice hard.

She shared her experience of the time when she gave a presentation in front of the International Olympic Committee. She explained that usually when people prepare for a presentation, they concentrate on themselves. However, Rah emphasized that what the audience wants to hear is much more important.

Another tip was to "keep it simple." When she was a journalist at Arirang TV, she was taught to make a message easy enough for a

6th grade elementary school student to understand, make it interesting enough for a middle-aged business man to be intrigued, and say it clearly enough for a 90-year-old to understand.

She concluded the lecture with great emphasis on "practice as much as you can." She gave some advice on mingling with international students at UNIST. Rah said, "You have it right here. To learn and to experience from their perspective, and to work with international people, brings you so many things. Please make the most of it."

The UNIST Journal sat down with Theresa Rah for a brief interview.

**Q. Do you have anything that you want to say to UNIST students?**

The time at your university is very good to get to know yourself. Don't waste time. Focus on what you want to do and what you want to study.

**Q. What do you think about UNIST's policy that all lectures should be carried out in English?**

You have a very special campus, with many international students. I have met a lot of foreign celebrities and they say that Koreans have a lot of potential, but the problem is always communication. So even though it can be difficult communicating with foreign students, just go ahead and try.

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# How Is Our Welfare Everyone?

Are you satisfied with the food you eat at UNIST? Is it okay for you to just stay in bed when you're sick?

UNIST is located in an isolated place compared to other universities. It is critical that student welfare is well-established to secure both the students' mental and physical health. However, it seems that there are many students who doubt the quality of the student welfare system at UNIST. In order to specifically identify the existing problems, the UNIST Journal conducted a student survey for two categories: food and the campus' medical office, from a total of 94 respondents.

Food is critical for living, and especially to students at UNIST who study, play, and live hard. It is critical for students in their 20s to consume enough nutritious food for health. UNIST has the dormitory and student union building cafeterias to provide food service. However, the survey showed that only 16% of the students use the school cafeteria. Then where do the rest of us eat?

Disregarding the dormitory and student union building cafeteria, there are only a few places for students to buy food. One is the convenient store and the others are restaurants such as Gimbab-chunguk, Do-dream, Baekak-guan, Halmae-gip, and Uni-snack. However, the quality of the food at these restaurants is questionable. According to the survey, around 90% of the students said that they were not satisfied with these restaurants. Gimbab-chunguk had the highest rate of dissatisfaction. The main reasons were the limited menu items, poor hygiene, poor service, food served too late, and the dissatisfactory quality of the food. Nonetheless, the reason why these restaurants are still full of people is because the students do not have any choice but to go there to eat. 89% of the students who eat at these places responded that they use these facilities because "it is nearby" or "there is no other choice for us."

If the majority of the students are not satisfied with the restaurants

and the quality of their food, then why isn't anyone doing anything about this? Why don't these restaurants try to improve the quality of their food and service? The problem is that there is no direct competition between restaurants. Gimbab-chunguk dominates the dinner market as it is the only place open for dinner in the Student Union Building. Other restaurants are located far away, so it is very likely that the students just go to Gimbab-chunguk. It is perfectly fine for Gimbab-chunguk to just stay as they are - regardless of the students' opinions - because people still come there to eat.

Healthcare is another important issue to students staying up late to study and susceptible to sickness. Besides, hospitals outside the campus are not easily accessible. It is critical that UNIST's medical office plays a very important role in taking care of students. However, according to the survey, only 21% of students go to the medical office when necessary, so how do the rest of us take care of ourselves?

Why don't we use the medical center, even though it is there for us? The main reasons were distant location, the short period of availability, and limited medicine provided. The dormitory, where all the students live, and the Main Administration Building, where the medical office is located, are at opposite ends of the campus, so it is not very location-friendly. There is also a conflict of time between the hours of operation and the students' schedule. Plus, it is not even open on weekends and holidays. Shockingly, 13% of students responded that they did not know that there is a medical office at the school.

As mentioned above, due to the nature of this specialized school, it is not easy to go outside the campus. Therefore, basic facilities should be properly prepared to fulfill students' needs. As UNIST has already accomplished a lot of work for only 4 years, we expect that these problems will also be soon be solved. The future of the university is the students, so a well-established welfare system for students is crucial.

## Be Humane to Help Human

The beautiful story of Myeong-jin Kwak, a mentor for the Midam Scholarship Committee

On November 5th, the UNIST president received a phone call from a woman whose son is a Midam mentee. She wanted to find the mentor who helped her son at her father's funeral. The story was posted on the UNIST portal website. UNIST students and faculty read the article and tried to locate the person. Finally, he was found to be Myeong-jin Kwak, majoring in Technology Management.

The Midam mentee couldn't have a private education owing to his unpleasant background, so Kwak has taught English to the boy through the Midam mentor program since September. One day, the child was absent due to his grandfather's funeral. Kwak realized his situation, and went to the funeral, paid condolence money with his allowance, and helped his mentee. He not only taught English to the boy, but also showed a warm heart to him.

### Interview with Kwak:

*Q: Did you have social responsibility or awareness of volunteering before you entered UNIST?*

Kwak: I have been aware of the problems in the local society. During my military duty, I met a lot of isolated people. Therefore I started to want to help them, even if it is not huge help. Especially, I want to contribute to serving the local community, as Ulsan, Ulju-gun and Korea have interest in

supporting and helping UNIST.

*Q: What do you think about the best relationship between mentor and mentee?*

Kwak: After being a mentor, I think that a mentor's role is not ordering students to study and initiating them into knowledge and experience. As I and mentees get to know each other, I learn from them, such as getting a new perspective. It is usual that a mentor is older than a mentee, however the mentor has never undergone in mentees' school days such as being a middle school student in 2013. It can be a cliché, in my view, but the relationship between mentor and mentee is understanding each other and discovering something new in their lives.

*Q: There are many Ulsan students in trouble, like your mentee. What kind of advice would you give as a mentor?*

Kwak: Keep going and overcome your hardships when you face adversity. Even if you are sensitive and vulnerable to fall into despair at that time, time will heal all sorrow. If bad and exhausting things happen to you, be sad and tired, but do not give up. I suggest that you can become a better version of yourself by overcoming the pain and doing your best during a hard time."

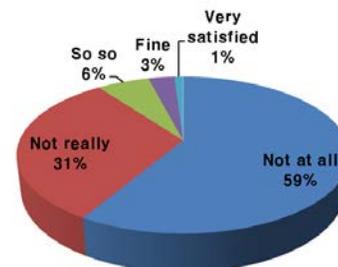
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Are you satisfied with the restaurants except Our-home and Well-story?

Period : 12.26.13~12.29.13

Respondent : 94

Method of survey: Google Docs



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## Problems in Low Turnout

On December 11th, UNISTARS elected the 4th student council. Among them, the Schools of ECE, GEE, TM and DHE ran in the election, with a single candidate. After voting, only the School of DHE recorded a participation rate of over 50%. On the next day there was a re-election. Candidates from the last three schools were also elected. However, with the exception of the School of DHE, the other three schools' turnouts were 53.3%, 50.9%, and 53.6%. The lower limit of a turnout is 50%, so this was a very low turnout. The election of a student president and the other 3 schools was on January 9th.

This year, the turnout and number of candidates was less compared to the past year. A candidate for student president and candidates of 3 of the 7 schools didn't run in the election. Students' indifference about who is student president and what they are doing is to blame. As the turnout decreases, the effectiveness of student councils also decreases. The organization looks good on the

surface, but actually participating in student union requires a lot of time and commitment. Because of much work, students feel much stress. This is one reason why many students are not concerned about the election of the student president.

Other universities in Seoul such as Sungkyunkwan and Hongik University all have single candidates. Furthermore, there are many universities which don't have a candidate. Because of low turnout, Seoul National University has no student president at the moment.

Low turnout and avoiding running for the election has become a social problem. Selfishness and indifference is a problem. To solve these problems, students must try to increase the value of the position of a student president. As the power of the student president increases, more students will participate in student council related matters and the power of the student council will increase too.

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## Music for the Tired Souls on Christmas Eve

On December 24th, 2013, on Christmas Eve, music from various instruments was played on the 2nd floor of the MAB (Main Administration Building), at 12:10 at lunchtime.

At UNIST, due to the trimester system, the Christmas holiday overlaps with the mid-term period, so people have exams before and after Christmas. Thus, it is very hard to celebrate and reminisce during this time of the year. However, during this year's Christmas Eve, some merry atmosphere was made thanks to the music resonating through the MAB at lunchtime.

The performers were from the Music and Creativity class - Strings course Professor Jong-Eun Lee (violinist), assistant instructor Jun-Hyun Park (cellist), and the members of the string orchestra club CZARDAS. This lunchtime concert was held on the 2nd floor of the MAB, which is directly below the professors' cafeteria on the 3rd floor. Therefore, the professors and students coming to dine at the cafeteria came to watch. Among the audience was Professor Bradley Tatar. He said, "At UNIST, the academic atmosphere is so heavy

that it seems like the students and professors are like studying robots. However, when you hear this beautiful music at the end of the year, it gives you a lot to think about, such as your friends and families. It gives you some time to relax."

Selections that were played included the "Carol Medley," by the 1st, 2nd, and 3rd violins and cellos, "Introduction et Rondo Capriccioso," by the violin solo and piano, and "The Name of Life" by the clarinets, flutes and cellos. The performance lasted around 25 minutes. After the performance, the audience gave the performers a warm and enthusiastic round of applause.

Regarding the preparation of this concert, the CZARDAS performers, Young-Je Woo (production manager, junior, piano), Da-Som Choi and Hye-Jin Ju (freshman, 2nd violin,) mentioned, "We prepared the scores of the 'Carol Medley' via the Internet, and it took 2 weeks to modify the orchestra score for our range of instruments. In addition, we advertised this event via posters and Facebook." Other freshmen performers said, "We were thankful for the chance to perform with the



violinist professor despite the fact that we are freshmen, and although we did not have sufficient time to practice together due to the exam periods, everybody tried their best and we are proud that we successfully carried out the concert."

Actually, this Christmas concert in the MAB was held for the second time at UNIST. Last year, there was also a concert at Christmas Eve performed and produced by the same lineup. Professor Lee mentioned that this Christmas lunch concert was made in order to liven up the Christmas atmosphere. In addition, she said that this year's session was much smoother and mature compared to the last one, because of the student performers'

passion. She commented that it is her goal and wish that this Christmas concert will become an annual tradition at UNIST.

Moreover, about some difficulties in performing the Christmas concert next year due to the change to the semester system, she said, "We plan to have the concert earlier, or have a concert with a different theme."

Finally, she thanked everyone who came to watch and cheer on this concert, and hoped that the people who did not have the time to see this can come next year.



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## The DHE Night



As winter comes, the time for freshmen at UNIST to select their school approaches near. There is a unique school at UNIST: The school of Design and Human Engineering, DHE. This school has two tracks: Industrial Design and Human & Systems Engineering. The DHE student council prepares a very special event for introducing their school every year, called the 'DHE Night.'

On Dec.12, at 7pm, this special event took place in the TD room, on the 10th floor of the 1st Engineering Building. This informative session is for many freshmen who are thinking about majoring in the DHE, as well as the DHE students and professors. It is the third annual session that the DHE student council prepared ever since the first one in 2011, and this event started for the purpose to inform about and advertise their school. Unlike other

schools' informative sessions, which are more like lectures introducing their tracks, DHE's session is unique because it is more like a friendly party with a dress code, in which there are many ice-breaking games, as well as food and drinks to toast. Hamburgers, s'mores, cakes, cookies and drinks were served in the room, adorned with Christmas ornaments, giving a holiday atmosphere. After students were seated, an introduction of the school was conducted by juniors and seniors, explaining the change of the school's two tracks, and what the students will learn in the DHE. In addition, alumni were invited to talk about what have done in their careers after graduation. Then it was time for freshman to eat and drink, along with time to consult with professors. Finally, everyone was paired up into groups, and participated in a game with incredible rewards (RC cars, mufflers, hand cream, etc.).

The DHE party was successful, since everyone had some time to relax, even though it was in the middle of the exam period. It was also a useful session for the students to ask professors and older students about what they want to major in, and to get advice about what to do in the future.

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## A New Sport at UNIST

Most people will know about UNIST rowing due to the TV show 'Infinity Challenge.' UNIST founded a rowing team as a varsity sport. Lots of prestigious foreign universities, such as Oxford and Harvard University, have a rowing club. At UNIST, the rowing club started as part of the leadership program, beginning a few months ago. From the leadership class, they developed into a rowing group.

The National Coordination Tournament was held recently and the UNIST team won the competition. Tangible results are already visible.

The UNIST rowing team participated in the sixth Busan Mayor Rowing Competition and won first place in both the indoor 2,000m and 500m for university men. The women placed second in the 500m and third in the 2000m.

Currently, UNIST is promoting regular competition with other universities' rowing clubs. The UNIST rowing teams are trying to promote a variety of strategies to enable rowing, such as securing facilities and equipment at Ulsan Lake.

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## Various School Jackets in UNIST

Walking along the campus, you can see many students wearing various school jackets. There are UNIST school jackets in 2 colors, navy and violet. Every school at UNIST has jackets with different designs and colors. Many clubs, such as INGAM, Value Explorer and groups that belong to the school, like student council, UIC (UNIST International Center), Club Union, and UNIST Journal, have jackets.

These jackets are outerwear known as a "baseball jackets." On the back, the name of each group is written differently from the other groups. There is also the logo of each group on the jacket. On the sleeve, students can freely choose what is to be written in Korean,

English, or a shape.

Why do so many students wear jackets? Generally, it is to feel a sense of belonging. If you wear a jacket, it means that you are associated with that particular group. You can feel unity with group members. Secondly, the jackets are comfortable and warm. Students wear them from fall to early spring. Lastly, jackets go well with other clothes. You can just wear pants and a t-shirt with these jackets.

Every jacket has their unique design with their own identity. These diverse and colorful jackets are becoming one of the cultural aspects of UNIST. Why don't you grab one and join the culture of UNIST?

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## The Hidden Gem - Indie Music

Music is more than just merely melodies and lyrics. Music is art, music is passion and music is one of the most powerful methods of expression. Throughout the history of mankind, music has played an important role in creating different cultures. It created trends, it created fashion and it created philosophies that came to life amongst the people. These days, in this 21st century where everything is advanced, the types of music, and the way people listen to music, has significantly changed. Big music companies prevalently 'make' music that attracts people's ears. Most of the songs are often very sexual, offensive and vulgar. It is hard to objectively say that those are 'bad songs' but we can question the essence of that music. Is it really music? Or is music just treated as a product produced by companies for profit?

Somewhere hidden, and somewhere underground, there are people who produce their own music according to their own taste, their own style and their own philosophy. These musicians are called indie musicians (the short form of independent musicians). Independent music is music produced independently from major commercial labels or their subsidiaries, a process that may include an autonomous, do-it-yourself approach to recording and publishing. This allows indie musicians to be unique, strong in character and different from the trends of the current music market. If you have ever listened to so-called indie music, you might have found that it is a little different from Lady Gaga, Ke\$ha or Justin Bieber. The advanced music design software of the 21st century encourages the discovery of fresh new music. People also love to discover fresh and new things. This is a wonderful

development for indie musicians as it gives opportunities to them to earn substantial profit from their music, of course, independently.

One of the most prominent characteristics of indie music is that it purely represents the musician's style. As the musicians produce their own music, they have the freedom to express their own intentions in their music. They sing about love, life, death, friendships and other little things that make up life. Their independence can even be spotted through their names. For example, some names of Korean indie bands are Sisters Barbershop, Mongoose, No Reply, and Peppertones. Expressing such freedom in music is mostly not possible for musicians who belong to a big record label company. Songs and albums are produced by professional producers, who decide everything for them. Indie musicians often sing for the sake of singing. They put together an album to sing to the world what they want to sing. Unfortunately these days, big record labels only produce the same kind of music that is strong, sexual, and addictive, for profit.

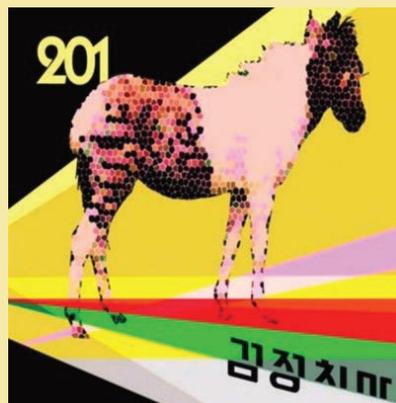
When indie musicians become famous in some way, some go major and sign with big label companies. Some hesitate to do this because this can restrict the degree of their freedom. Indie musicians truly value the essence of music, rather than the monetary value of music. Some classic Korean indie albums that can be recommended are, as mentioned above, Sister Barbershop's (언니네 이발관) album 'The Very Normal Being (가장 보통의 존재)' and Black Skirt's (검정치마) album '201'.

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Korean Indie Albums to Recommend:



Sister Barbershop's  
'The Very Normal Being'



Black Skirt's  
'201'

## Passion, Enthusiasm, and Creativity



Recently, I have seen lots of performances, plays and musicals, like *Jack the Ripper*, *Carmen*, *Bonnie and Clyde*, and *Joseph and the Amazing Technicolor Dreamcoat*, etc. Every year the production team tries to improve casting, stage design and directing, including big changes, such as special types of performances, which are different from modern plays or musicals.

For instance, for *The Three Musketeers* and *Carmen*, actors appeared from the audience, which made the audience feel that they were part of the play. In the middle of *The Three Musketeers* they consider the audience as the citizens, and make D'Artagnan go and pick an audience member to kiss for 10 seconds. In *December*, two of the actors went into the audience and have a conversation.

In *Closer* and *December*, which is a musical made from Kim Gwang Suk's song, they used screen images to make more delicate and effective staging. Especially *American Idiot*, which was performed by the original Broadway cast who came to Korea to do this show, used about 40 screens with fascinating lights. All musicals like *Jack the Ripper*, *Carmen*, etc., show a lot of details in the stage design, and in a really short time they change to next the set to keep the pace of the story.

*Fuerzabruta* is a show from Argentine creator Diqui James. Its name means 'brutal force' and it ran from October to December, 2013 in the Jamsil Complex Stadium. It was necessary for the audience to stand for the whole time. There are some special tips for watching this show. It is easy to understand by using the poles you need to move counterclockwise. Also, if you stand close to the pole, you hardly get wet and it is much better to withstand the people. First you start with the pole in the middle but a bit to the left side, and when it looks like it's finished you better move to the next pole, which stands in the middle part near the back. Keep moving and at last there is a highlight of this show. Now, you need to look above. There will be thin layer on the top with the water and the actors are swimming. If you see this one you will love it.

Another one is a musical murder ballad. One thing special about this musical is that on the stage there are audience members with the actor. You can reserve the seat and you can see the actors really closely and sometimes the actors do something to the people who are sitting there. It depends on the people who reserve that seat. Normally people really enjoyed the participation and they show great effort in the curtain call.

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## Merry-Examas



Ji-Hyeon Lee, jihyeonlee@unist.ac.kr (Graphos)

## Why UNIST is Called Uberia



there is no “thermal island effect” on campus. A thermal island is where the temperature in a populated area is higher at the center owing to population growth, a number of buildings, and a traffic increase. The strength of the thermal island effect is much stronger at night than during the day since roads and buildings release heat stored during the day time at night.

Thirdly, radiation cooling is well applied to the surroundings of UNIST. Maximum cooling of the ground occurs under clear skies, light winds and dry conditions. In the winter, a large temperature difference sometimes exists between the urban area and the new territory. Topographical features of UNIST complexly satisfy these conditions, which are clear skies, dry condition, and new territory, because UNIST was only established five years ago. Also, Eonyang-eup, where UNIST is located, has a smaller than average amount of clouds than other areas in Ulsan according to observation sources of the Korea Meteorological Administration. As a result, people feel very cold at night at UNIST.

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In winter, Ulsan is warm enough. In fact, Ulsan is mild in the winter due to a warm current in the East Sea. However, most students say that UNIST is “Uberia” (UNIST + Siberia) in the winter. Why is our school’s winter weather severely cold? The reason is assumed to be the geographical features.

First, the geographical location of UNIST is completely surrounded by mountains. In the daytime, the ground of the UNIST valley becomes much hotter than the peak of the mountains, so the air rises because hot air is lighter than cold air. Then wind blows toward the mountaintop and it is called a mountain breeze. In contrast, the valley ground becomes much colder than the top of the mountains at night so winds blow toward the university. It is called a valley breeze. This phenomenon becomes more extreme in the winter. As a result, UNIST is much colder than plains with fewer mountains.

Secondly, UNIST is not a highly populated area so there is not much traffic or many buildings. Thus,

## Winter, It is the Season for Dieting



Winter has become colder and colder. Winter’s thick clothes hide body figures and reduce the tension for dieting, so many people don’t worry about managing their bodies in the winter. People think the summer is more effective for dieting, because we sweat much more than in the winter. Actually, this is not exactly true.

The reason why a winter diet is effective is because of your basal metabolic rate, the minimum rate for maintenance of life conservation. In the winter, our bodies become cold. After feeling cold, our bodies consume more energy to raise our body temperature and keep warm. When the temperature goes down, muscles also tremble (shivering), increasing the amount of calories burned. Last year, a research team at Seoul National University investigated ten people in their twenties whose body max index (BMI) was normal, overweight, or obese. They found their

body fat had decreased when they were exposed to cold.

They said, “The reason that body fat decreased is because fat energy was burned during the process of muscle contraction to produce heat.”

There are several ways to increase your basal metabolic rate. First, it is good to do strength exercises and drink plenty of water. Secondly, maintaining a slightly cold temperature is better for losing weight. Staying a little cold helps your body to consume energy by itself, and is more helpful for effective weight loss. Finally, eating regularly is another way to lose weight effectively. Regular meals are essential for maintaining or losing weight, and eating chicken breast and mackerel, which is full of protein, and vegetables and fruits, which are low in calories, can increase your basal metabolic rate. Exercise in the winter is very important. People who have a lifestyle of only walking around just short distances need to move more in the winter, especially people who live in the dormitory. For them, moderate intensity exercises are needed regularly, even in winter. It is recommended to walk and stretch for 30 minutes outside and ride a bicycle indoors. Steady exercise in the winter not only has a better effect for dieting than in the summer, but also will also better influence your summer diet.

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## What is an Academic Journal?

What do you think at first when you hear the words “academic journal”? Some students might not know or be familiar with the words. However, it is easy to know what it is when you hear some names of academic journals like Science, Nature, Cell and more. There are only some students who understand exactly what academic journals are. The reason it is unfamiliar is because students don’t have many chances to read or encounter academic journals. According to the Oxford dictionary, a journal is a newspaper or magazine that deals

with a particular subject or professional activity. Among the many academic journals, which ones are famous, and what is the reason to support their fame? Academic journals that are in the Science Citation Index (SCI) are known as famous and high quality journals. SCI was made by the Institute for Scientific Information (ISI). In SCI, you can see how many times theses were quoted and mentioned in other theses. This is called the Journal Impact Factor, which is important to see how one thesis contributed to another.

The impact factor is calculated by dividing the total number of quoted times by the total number of theses. The higher the impact factor, the more famous and well known the journal is. Beside the SCI, there are two more categories that are distinguished by field, the Social Science Citation Index (SSCI), and the Arts and Humanities Citation Index (A&HCI). Also, there is the Science Citation Index Expanded (SCIE), which is a more detailed version of the SCI.

These academic journals are important because they are used to

judge the results of research by researchers. It is judged by the number of theses that are written in famous journals, and how high the impact factor is. The number of theses in the SCI and impact factor is used to compare the level of research between countries and institutes. It is likewise used to evaluate the budget of research funds and is used as materials for deciding awards. It also can be used as a standard to evaluate a university’s performance.

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### Homo-Unistar



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# Northeast Asia Oil Hub in Ulsan Port

Tremendous opportunity to foster Ulsan locally and abroad

No one ever struck oil in Korea yet, but Ulsan earned another gem as precious as petroleum. On Nov. 27th, the groundbreaking ceremony for the Northeast Asia Oil Hub was held at the Ulsan Port. Such an oil hub is a critical spot for logistics and transactions dealing with petroleum among main oil agents such as oil companies, traders, tank/equipment engineering companies, and harbor facilities. This grand project focuses on Ulsan Port's role in creating high value with storage, transport, logistics regarding petroleum and vitalizing financial, and information industry.

Ulsan Port is one of the three biggest harbors in Korea, followed by Busan Port and Kwangyang Port. Regarding fluid distribution, Ulsan Port ranked fourth, following Houston, Rotterdam, and Singapore, handling approximately 200 million tons annually. It already has a 21-million barrel storage capacity, and is going to additionally secure a further 9.9 million-barrel capacity after the first project.

For this project, approximately one trillion and 660 billion won will be invested, and the project will be divided into two stages. The first business includes the construction

of 42 storage tanks and a bulk storage plant of 9.9 million barrels, planned to be completed in 2016. The other includes securing 26 tanks and storage facilities of 18 million and 500 thousand additional barrels, by 2020.

The total effect on production inducement regarding this business is expected to be five trillion and 200 billion won.

If petroleum transactions are invigorated through this oil hub, the Korean energy industry, which already reached a global level, will create jobs and pioneer a new market through the convergence with service industries such as distribution and manufacturing. It will become a great opportunity to realize a creative economy in the field of the energy industry. Also, financial services based on incalculable petroleum transactions will trigger the development of a financial industry.

Another high expectation regarding the Northeast Asia Oil Hub is the deregulation of the oil market. The Korean government has regulated a blending of petroleum products for export among the companies, yet a law has been passed recently. This deregulation will



enable oil companies to export petroleum to China, Japan, and Southeast Asia through the blending.

Hanmo Koo, the head chief of Logistics & Planning Team at UPA (Ulsan Port Authority), emphasized that in order for this project to be successful, not only is hardware infrastructure seriously needed, such as harbor and storage facilities, but the software infrastructure is seriously needed as well, especially a deregulation and improvement of the business environment to vitalize petroleum transactions and distribution. Moreover, professional manpower for the spot market and financial transaction is far from sufficient. Therefore, cooperation between government, public institutions, private corpora-

tions, and even citizens is vital for improvement.

He stressed that UNIST's role cannot be understated since experts in trading and pricing information are insufficient. Although countries with oil hubs manage training programs for international trading experts, there are currently no educational institutions in Korea. UNIST created a graduate school for energy specialists, ECTFE (Energy Commodity Trading and Financial Engineering), and as soon as the school begins to produce the professional manpower in earnest, the infrastructure for human resources will successfully expand in the near future.

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## Problems of a Leave of Absence

In the third term, UNIST has about 1000 students apply for a leave of absence. It is one third of the students at the school. Why did so many students abruptly leave?

According to some students taking a leave of absence at UNIST, there are many reasons. First, students are tired of successive semesters and frequent quizzes and exams. Secondly, the third term at UNIST is too cold. The third semester starts on the last week of November and lasts until the middle of February. It is the coldest time in Ulsan. In addition, not enough courses are open, so students have difficulty in enrolling in courses. Thirdly, the reason is related to the change of the system of the semester. Due to this change, students have a benefit to have one more semester. Students want to have their own time and have their vacation.

How about other university students? According to the employment portal site Albamon, the main reason for taking a leave of absence is the burden of school expenses. Another important reason is to build a good resume. Students take language studies abroad, travel, enter contests, and so on. According to the Education Statistical Year

Book in 2013, there are over a million students taking a leave of absence. It accounts for 29.2% of all university students. According to this statistic, a new class of society called 'absence' is made. Students are leaving school for at least one semester. Due to the current condition of the economy, getting a job is becoming harder. This creates a big burden for students. However, universities do not have particular solutions. Taking a leave of absence is becoming a serious problem.

Not all students just take a leave of absence out of the blue. Some just take it to have some good rest. Unplanned leaves of absence may not be a good phenomenon for universities. For students, taking a leave of absence may look like a sweet and long vacation that you can have during your tertiary education period, but unplanned absences can lead to a waste of time. It also may look like you are just escaping from a busy university life.

Therefore, students should make thorough plans and have time for self-improvement during their leave of absence period.

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## Going with You! Presidential Committee on Young Generation



(above) Presidential Committee on the Young Generation

A so called "Youth Bus" stopped in front of Noryangjin Station in Seoul for a whole day, on December 23rd, 2013. The bus was for the young generation concerned about their employment. On the bus, young people could take a job aptitude test, and get counselling from experts. This program is one of the communication tools of the Presidential Committee on the Young Generation.

The Presidential Committee on the Young Generation was founded in July 2013, for the purpose of communicating with the young.

The primary role of this committee is communication. The committee has several programs to meet with the youth, such as the Youth Bus, Town Hall meeting and Pilgrimage of the Young. It makes a tour not only around Seoul, but also throughout the country, with stops in places such as Ulsan, Chuncheon, Gyeong-san, and so on.

The Pilgrimage of the Young, Talk Concert and the Youth Bus are the most popular programs. According to the committee, more than

10,000 young people participated from October 29th to November 28th.

During the meeting, the biggest problems for youth were 'employment and getting a job' accounting for 48%, followed by 'money for self-improvement' with 28%. The chairman, Nam, said, "While I met the young living in each district, I realized how they were thirsty for this high quality information and consulting."

"It's very regrettable that there is no communication between employers and the young. It is so important to make a place for communication between the two big groups." said Theresa Rah, a member of the committee.

The committee also has an affiliated organization for youth policy, "2030 policy builders." About 200 young people joined it and they collect the opinions of youths. Lee Yong-Gyu, a UNISTAR who is one of the members, said, "It is very interesting to research the problems of the young by meeting them personally and making a proposal for them to the government. This is quite worthwhile work. I hope many UNISTARs actively participate in social issues and furthermore, lead from the front of the society."

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# UNIST Girls, Be Ambitious, Become a Professional

Prof. Young-Shin Kwak (School of Design and Human Engineering)

‘Boys, be ambitious!’ might be one of the well-known English phrases for Korean students. However, many people may not know who made that famous quote. Honestly, I also did not know, until I did some research and found that it was William Smith Clark’s (July 31, 1826 – March 9, 1886) parting words to his Japanese students as a foreign advisor at the Sapporo Agricultural College. Considering that at that time most of the college students in Japan must be boys, blaming Clark to be sexist may not be very fair. Even though I do not believe ‘boys’ in ‘boys be ambitious’ actually mean male students only, it looks like Korean society regards ambition mostly as a boys’ thing.

I don’t have the exact statistics but I met more female UNIST students than male students who have relatively low self-esteem.

In this article, I’d like to especially encourage UNIST girls to be ambitious. UNIST students are smart. I have a strong belief that many UNIST students will have

very successful careers in their future. At the same time, I have some worries that we may have a fewer number of socially successful UNIST girls than UNIST boys, due to the girl’s low self-esteem.

If you are a girl reading this article who never imaged a huge social success in your life and/or have no ambition in your life, you may blame our society for discouraging you just because you are a girl. From now on, please be brave and ambitious for your bright future. You should serve our community to make a better world with your talent. Do not waste your talent because of your low self-esteem. Give yourself a chance.

To help with your understanding, I would like to share my own bad memories that discouraged me during my career. The first experience was when I decided to study physics for my bachelors degree. Many people around me said. “you are a girl! why physics? Physics is a boys’ thing.” Then I thought, Why does your gender matter when you study science or engineering?

My second and third experience occurred when I decided move to a foreign country for my PhD. I heard comments like, “you are a girl! How are you going to live alone without your parents or your husband?” At that time, I thought ‘Come on, I’m a grown-up. I can make a living by myself.’ For as long as I can recall, many negative comments I received during my career decision were based on my gender, not on my personal characteristics or ability. I know many young UNIST girls still have similar experiences as me.

Even if you want to be ambitious, you may not know your ambition. To help the wandering young souls at UNIST find their own ambition, I’d like to give some very simple advice: ‘be a professional first, and you will know your ambition.’

Here is a bit more of my personal experience. Once I started my professional career after finishing my PhD degree, all the people I met treated me professionally and judged me only based on my professional achievement. I still cannot



say that there is no more glass ceiling for women. However, it’s clear that it’s becoming a more even playing field. There might be an argument about the conflict between being a socially successful woman and being a good mother. My conclusion is simple. You can be a successful career woman and a good mother at the same time as long as you don’t think you have to choose to be only one of them.

To energize your ambition, here is a slightly modified quote from Clark. “Boys and girls, be ambitious. Be ambitious not for money, not for selfish aggrandizement, not for the evanescent thing which men and women call fame. Be ambitious for the attainment of all that a man can be.”

## Why Should You Become an Exchange Student?

Belinda Chung (Nano-Bioscience and Chemical Engineering)



ment, but this is part of a process that will help you grow into a more mature person. My roommate was a Chinese student who transferred to the University of Michigan. Because we were both international students, we bonded over many things, but the different beliefs and customs also created a gap between us. Sometimes we argued over petty things and got upset by each other’s presence, but we tried to work out the differences between us.

Also, you will feel more responsible for yourself because your friends and family who usually take care of you are not there to support you. Sometimes it will be impossible to find a person to ask for advice when you need to make major decisions or someone who can comfort you in your sadness and loneliness. I missed my friends in Korea a lot whenever I had a tough day. I either had to find a way of dealing with it by myself or ask someone else for help. However, these hardships will only make you a more independent and strong person.

After meeting new people, you will learn a lot more about the world. Each person you meet will influence your ways of thinking and reasoning. You will be able to find new goals and develop new skills. Experiencing life at a different university will not only help you reflect on yourself but also will inspire you to seek new challenges. In short, studying abroad is a great opportunity and privilege, which a university student shouldn’t miss. So I recommend that you to check the portal site for any information about exchange programs or ask the staff at UIC.

Have you ever thought that your university life is too monotonous? A semester abroad is an experience that will add spice to your university life. You will encounter so many new people, learn to survive in a different environment and dream beyond your boundaries. It can be challenging, but it is worth it. If you think you are ready to take this challenge, I encourage you to visit the UIC for more information.

As an exchange student, you will meet diverse people from different countries, learn to respect their perspective and communicate with them. There will be unavoidable instances of disagree-

### Unist Dictionary

#### Kal-Bab

def. Having a meal on time

*i.e. Kal-bab call?*

Do you want to eat on time today?

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*Special thanks to  
Deirdre Madden and Jesse Nelson from LEC  
and Graphos for helping the UNIST Journal.*

THE UNIST JOURNAL  
2014  
VOLUME 8