



## Science Dialogue

### Scientific Adventure of an American Fellow in Japan

Dr. Holly Lynn Walen



On 28 January, Dr. Walen visited Kiryu High School in Gunma Prefecture to give a lecture under JSPS's Science Dialogue program to 23 selected students in the first and second grades. Hailing from the United States, Dr. Walen is currently carrying out research in the field of analytical chemistry at the Surface and Interface Science Laboratory in RIKEN.

Her main focus is on an investigation of the optical properties of transition metal dichalcogenides. While this theme would seem a bit intimidating for high school students, Dr. Walen softened its edges with a student-friendly presentation delivered with gentle charm.

#### Stained Glass and Stainless Passion

Before Dr. Walen started talking about her research, she introduced her hometown in Minnesota, a state in the northern mid-western of the US, known by its nickname "Land of 10,000 Lakes." She, then, described her nanoscience research, especially as it pertains to materials and surface science. To enhance the students' understanding, she used a series of interesting slides. The discussion prompted one of the students to ask how stained glass works. Dr. Walen explained that the colors of stained glass arise from the metal nanoparticles dissolved in the glass. The size, shape, and the electronic properties (i.e. identity) of the metal nanoparticles determine the color of the glass. The larger point that she was trying to make was that the optical and physical properties of materials change with size. As technology becomes

smaller, it's important to understand those changes from the perspective of fabrication to manufacturing for a specific purpose.



Kiryu High School

is well suited for a Science Dialogue lecture as it is designated by the Ministry of Education as a Super Science High School. Its students are looking forward to a school trip that will take them to the US this spring. During her lecture, Dr. Walen shared with the students her story of why she decided to become a researcher. She said that she had once worked as a corporate researcher, where she undertook a series of tasks that were for her rather monotonous. That experience caused her ponder what she really wanted to do, sparking what was a passion to become a full-time researcher in an academic laboratory.

After the lecture, a survey of the students' responses was taken. The results showed that their experience with Dr. Walen had given them a stronger incentive to study both English and nanoscience. Having worked through some twists and turns in paving her own path as a researcher, Dr. Walen inspired the students in a way that may help them chart their own courses as Japan's next-generation up and coming researchers.

Overseas Fellowship Division

The following fellows participated in JSPS's Science Dialogue Program during the period from October through December 2016. For details about the program, please see its website: [www.jsp.s.go.jp/english/e-plaza/e-sdialogue](http://www.jsp.s.go.jp/english/e-plaza/e-sdialogue)

Venue	Lecturer	Nationality
Iwate Prefectural Kamaishi High School	Dr. MEZIL, S. J.	France
	Dr. TSAI, C.	Taiwan
	Dr. ASLAM, M.	India
Iwate Prefectural Mizusawa High School	Dr. BACHMANN, H.	Germany
	Dr. CRAIG, G. A.	UK
	Dr. LE, P. Q.	Vietnam
	Dr. SINGH, T.	India
	Dr. WEINER, A. K.	Germany
Akita Prefectural Yokote High School	Dr. LLAVE PEREZ, Y. A.	Peru
Seishin Gakuen High School (Ibaraki)	Dr. APPELLANT, R.	Belgium
	Dr. CHAKRABORTY, S.	India
Tochigi Prefectural Utsunomiya Girls' High School	Dr. AWASTHI, S.	India
	Dr. BALOIS, M. C.	Philippines
	Dr. BOUCHET, A.	France
	Dr. KOID, S.	Malaysia
Gunma Prefectural Takasaki Girls' High School	Dr. RYAN, K. R.	UK
Saitama Prefectural Kumagaya Girls' High School	Dr. TSAI, C.	Taiwan
Chiba Municipal Chiba High School	Dr. THANGAVEL, S.	India
Chiba Prefectural Chosei Senior High School	Dr. BUI, C.	Vietnam
	Dr. POPPE, C. P.	Netherlands
	Dr. BORAH, P.	India
Ichikawa Gakuen Ichikawa Junior & Senior High School (Chiba)	Dr. KAUNITZ, L. N.	Argentina
	Dr. KUCHTA, K.	Germany
	Dr. LAU, Q.	Australia
	Dr. MOTAKATLA, V.	India
	Dr. NAVANEETHAIYER, U.	Sri Lanka
Junior High School at Komaba, University of Tsukuba (Tokyo)	Dr. THEURKAUFF, I.	France
Senior High School at Komaba, University of Tsukuba (Tokyo)	Dr. TRAORE, A.	Mali
	Dr. KOLOMENSKIY, D.	Russia
Soka Senior High School (Tokyo)	Dr. ZOUJIKR, I.	Australia
Tokyo Metropolitan Hibiya High School	Dr. ARES, A.	Spain
Tokyo Metropolitan High School of Science and Technology	Dr. SCHWEIGHAUSER, L.	Switzerland
	Dr. THOMSON, R. J.	New Zealand

Venue	Lecturer	Nationality
Tokyo Metropolitan Tama High School of Science and Technology	Dr. TAMBI, R.	India
Toshimagaoka Joshi Gakuen Senior High School (Tokyo)	Dr. ROSNER, K.	Hungary
Keio Futsu School (Kanagawa)	Dr. MARTIN, J. D.	USA
Niigata Prefectural Takada High School	Dr. JI, Y.	Korea
Toyama Prefectural Toyama Senior High School	Dr. GOMEZ-CASTRO, D.	Spain
	Dr. QUILAIN, B.	France
Fukui Prefectural Fujishima Senior High School	Dr. BOOKER, I. D.	Germany
	Dr. CHING, C.	Taiwan
Yamanashi Prefectural Hikawa High School	Dr. KARLSSON, C.	Sweden
Yamanashi Prefectural Kofu Nishi High School	Dr. MA, J.	Korea
Yamanashi Prefectural Nirasaki High School	Dr. YIM, J. C.	Canada
Gifu Prefectural Kamo Senior High School	Dr. KHUJANAZAROV, T.	Uzbekistan
Shizuoka Prefectural Nirayama High School	Dr. LOPEZ DAVILA, V.	Spain
Shizuoka Prefectural Nirayama High School	Dr. KUMAR, R.	India
	Dr. MEEBOON, J.	Thailand
Nagoya City Koyo Senior High School (Aichi)	Dr. TURRIZIANI, S.	Italy
Aichi Prefectural Kariya Senior High School	Dr. ALI, S.	Pakistan
	Dr. GOVINDAN, A.	India
Aichi Prefectural Kasugai Senior High School	Dr. KIM, E.	Korea
Aichi Prefectural Okazaki Senior High School	Dr. WEST, C.	UK
Aichi Prefectural Zuiryo High School	Dr. PASTUHOV, S. I.	Bulgaria
Kyoto Prefectural Yamashiro High School	Dr. WARMER, F.	Germany
	Dr. CASTILLO, C. C.	Spain
Hyogo Prefectural Kobe High School	Dr. KAMRUZZAMAN, M.	Bangladesh
	Dr. PAUTY, J.	France
Kagawa Prefectural Takamatsu Sakurai High School	Dr. SKALOMENOS, K. A.	Greece
Fukuoka Prefectural Kasumigaoka Senior High School	Dr. HONG, Y.	Korea
Kumamoto Prefectural Kawaura High School	Dr. VODICKA, P.	Czech
Miyazaki Prefectural Nobeoka High School	Dr. SINGHVI, M. S.	India
	Dr. DUWAL, R. K.	Nepal
	Dr. CIFTCI, H. I.	Turkey