

Daily Schedule and Sessions of 28th JSPMI Annual Meeting

Wednesday, September 19

12:00 p.m. –	Registration
1:00 – 1:10 p.m.	Opening Ceremony
1:10 – 2:10 p.m.	Oral Presentation (4 titles)

* Boxed numbers indicate presentations by student.

1 Lipid biosynthetic pathway required for arbuscule formation

Taigi Igarashi¹, Yusaku Sugimura², *Katsuharu Saito¹

¹Shinshu Univ., ²Hokkaido Univ.

2 Characterization of the *Bletilla striata* (Orchidaceae) seed coat in regulation of the interaction with symbiotic or pathogenic fungi.

*Chihiro Miura¹, Miharuru Saisho¹, Takahiro Yagame², Masahide Yamato³, Hironori Kaminaka¹

¹Tottori Univ., ²Mizuho Kyo-do Mus., ³Chiba Univ.

3 Research of host specificity of the legume-rhizobia interaction

*Yasuyuki Kawaharada

Iwate Univ.

4 Current status of the resources related to *Lotus japonicus*

*Shusei Sato¹, Shogo Nitanda¹, Shohei Kusakabe¹, Stig Andersen², Vikas Gupta², Nadia Kamal³, Klaus Mayer³, Masatsugu Hashiguchi⁴, Hidenori Tanaka⁴, Ryo Akashi⁴

¹Tohoku Univ., ²Aarhus Univ., ³Helmholtz Zentrum München, ⁴Univ. Miyazaki

2:10 – 2:25 p.m. Break

2:25 – 3:25 p.m. Oral Presentation (3 titles)

* Boxed numbers indicate presentations by student.

5 Cancelled

6 Denitrification is lower in *Bradyrhizobium japonicum* than in *B. diazoefficiens* due to impaired nitrate reductase activity

*Arthur Fernandes Siqueira, Kiwamu Minamisawa, Cristina Sánchez
Grad. Sch. Life Sci., Tohoku Univ.

7 The determinant of symbiotic incompatibility between *Rj2*-soybean and bradyrhizobia

*Masayuki Sugawara¹, Yosuke Umehara², Satoko Takahashi¹, Shusei Sato¹, Hisayuki Mitsui¹, Kiwamu Mimanisawa¹

¹Tohoku Univ., ²NARO

8 Immune peptides Pep confers not only stress tolerance but also plant adaptation to low nutrients and symbiosis with microbes in rice.

*Masako Fuji¹, Rena Tani¹, Shigetaka Yasuda¹, Yoshihiro Kobae², Yuniar Devi Utami³, Yuichi Hongoh³, Yutaka Sato⁴, Yusuke Saijo¹

¹Div. Bio. Sci., NAIST, ²Rakuno Gakuen Univ., ³Grad. Sch. Biosci. Biotech., Tokyo Inst. Technol., ⁴Natl. Inst. Genet.

3:25 – 3:40 p.m.	Break
3:40 – 5:00 p.m.	General Discussion 1 (oral: 1 – 8)
5:00 p.m. –	Poster Viewing (mixer)

Thursday, September 20

9:00 – 10:15 a.m.	Short Presentation (47 poster titles)
10:30 – 11:30 a.m.	Poster Viewing with Authors (<i>odd numbers</i>)
11:30 – 12:30 p.m.	Poster Viewing with Authors (<i>even numbers</i>)

Lunch/Special Session for Students and Early Career Researchers/Committee Meeting

1:45 – 2:20 p.m.	General Discussion 2 (poster: P1– P16)
2:20 – 2:30 p.m.	Break

2:30 – 3:05 p.m.	General Discussion 3 (poster: P17 – P32)
3:05 – 3:15 p.m.	Break
3:15 – 3:45 p.m.	General Discussion 4 (poster: P33 – P47)
3:45 – 4:00 p.m.	Break
4:00 – 4:45 p.m.	Special Lecture 1 Atsushi Ishihara, Professor, Tottori University Evolution of defense-related secondary metabolism in the Poaceae
4:45 – 5:00 p.m.	Break
5:00 – 5:45 p.m.	Special Lecture 2 Yusuke Saijo, Associate Professor, Nara Institute of Science & Technology Integration of microbial and environmental cues in plant immunity and adaptation to fluctuating environments
5:45 – 6:00 p.m.	Break
7:00 p.m. –	Social Gathering

Friday, September 21

9:30 – 10:30 a.m. Oral Presentation (4 titles)

* Boxed numbers indicate presentations by student.

9 Analysis on regulation of the quorum sensing of *Ralstonia solanacearum* strain OE1-1 by the RNA-seq

*Yasufumi Hikichi¹, Tatsuya Nobori², Kazusa Hayashi¹, Wakana Senuma¹, Akinori Kiba¹, Kouhei Ohnishi¹, Kenji Kai³, Kenichi Tsuda²

¹Kochi Univ., ²MPIPZ, ³Osaka Pref. Univ.

10 Antagonism between SA- and JA-signaling conditioned by saccharin renders resistance to a specific pathogen in *Arabidopsis thaliana*

*Phuong L.T.^{1,3}, Aprilia N.F.¹, Luan M.T.^{1,3}, Matsui H.¹, Noutoshi Y.¹, Yamamoto M.¹, Ichinose Y.¹, Shiraishi T.², Toyoda K.¹

¹Okayama Univ., ²RIBS Okayama, ³Hong Duc Univ., Vietnam.

11 A CEP peptide acts as an endogenous suppressor in Arabidopsis

*Aprilia N.F.¹, Mai T.L.¹, Phuong L.T.¹, Zhao L.¹, Shiokawa T.², Tada H.², Matsui H.¹, Noutoshi Y.¹, Yamamoto, M.¹, Ichinose Y.¹, Shiraishi T.³, Toyoda K.¹

¹Okayama Univ., ²Adv. Sci. Research Center, Okayama Univ., ³RIBS Okayama

12 Characterization of chitosan-binding protein from pea cell wall using a biocytin hydrazide-labelled chitosan oligosaccharides

Mika Matsuo¹, Maya Kawabata¹, Momiji Miki¹, Hidenori Matsui¹, Yoshiteru Noutoshi¹, Mikihiro Yamamoto¹, Yuki Ichinose¹, Tomonori Shiraishi², *Kazuhiro Toyoda¹

¹Okayama Univ., ²RIBS Okayama

10:30 – 10:45 a.m.

Break

10:45 – 11:25 a.m.

General Discussion 5 (oral: 9 – 12)

11:25 – 11:40 a.m.

Break

11:40 – 12:10 p.m.

JSPMI 28th General Meeting & Closing Ceremony

Scientific Posters of JSPMI 28th Annual Meeting

Wednesday, September 19

12:00 p.m. – Poster Set-Up

Thursday, September 20

9:00 – 10:15 a.m. Short Presentation (all posters)

10:30 – 11:30 a.m. Poster Viewing with Authors (*odd numbers*)

11:30 – 12:30 p.m. Poster Viewing with Authors (*even numbers*)

1:45 – 2:20 p.m. General Discussion 2 (P1 – P16)

2:30 – 3:05 p.m. General Discussion 3 (P17 – P32)

3:15 – 3:45 p.m. General Discussion 4 (P33 – P47)

Friday, September 21

9:30 – 12:10 p.m. Poster Take-Down

【Posters, 47 titles】

* Boxed poster numbers indicate presentations by student.

P1 Analysis of the synthesis and secretion of santopine in tobacco

*Tomohisa Shimasaki, Takashi Kawasaki, Kazufumi Yazaki, Akifumi Sugiyama
RISH, Kyoto Univ.

P2 Analysis of the caffeine secretion from coffee roots for the modeling of rhizosphere caffeine

*Kohei Ohno¹, Masaru Nakayasu¹, Tomo Kawakami¹, Shoichiro Hamamoto², Kazufumi Yazaki¹,
Akifumi Sugiyama¹

¹RISH, Kyoto Univ., ²Grad. Sch. Agri. Life Sci. Univ. Tokyo.

P3 Analysis of the dynamics of shikonins in the rhizosphere of *Lithospermum erythrorhizon*

*Ko Sato¹, Shoichiro Hamamoto², Taku Nishimura², Kazufumi Yazaki¹, Akifumi Sugiyama¹

¹RISH., Kyoto Univ., ²Grad. Sch. Agri. Life Sci., Univ. Tokyo.

P4 Analysis of dynamics and function of daidzein in the soybean rhizosphere

*Fuki Okutani¹, Shoichiro Hamamoto², Naoto Nihei², Taku Nishimura², Yuichi Aoki³, Hisabumi Takase⁴, Kazufumi Yazaki¹, Akifumi Sugiyama¹

¹RISH., Kyoto Univ., ²Grad. Sch. Agri. Life Sci., Univ. Tokyo., ³Grad. Sch. Info Sci., Tohoku Univ.,

⁴Bioenv. Sci., Kyoto Gakuen Univ.

P5 The influence of host plants on the distribution of Cluster II *Frankia*

*Kai Battenberg¹, Jannah A. Wren², Alison M. Berry²

¹CSRS, RIKEN, ²Depart. Plant Sci., UC Davis

P6 IS-mediated deletion on *Bradyrhizobium* genome by a negative selection marker

*Haruka Arashida, Haruka Odake, Masayuki Sugawara, Kiwamu Minamisawa

Grad. Sch. Life Sci., Tohoku Univ.

P7 Experimental evolution of bradyrhizobial symbiosis island by soil inoculation

*Haruka Odake, Masayuki Sugawara, Kiwamu Minamisawa

Grad. Sch. Life Sci., Tohoku Univ.

P8 Genome comparison and evolution between *Lespedeza* and *Glycine*-nodulating bradyrhizobia

*Yuki Konno¹, Masaya Kajiwara², Tomoyuki Nemoto², Masayuki Sugawara¹, Kiwamu Minamisawa¹

¹Tohoku Univ., ²Ishinomaki Senshu Univ.

P9 Genomic islands variation of *Bradyrhizobium elkanii* strains

*Yudai Gamo¹, Manabu Itakura¹, Kiwamu Minamisawa², Takakazu Kaneko¹

¹Kyoto Sangyo Univ., ²Tohoku Univ.,

P10 Genetic and symbiotic diversity among rhizobia isolated from soil and *Lotus japonicus* nodules in Miyakojima

*Maho Hikida, Kazuhiko Saeki

Nara Women's Univ.

P11 Whole genome sequencing of *Lotus japonicus*-associated symbionts and inoculation experiments to *L. japonicus* wild accessions

*Masaru Bamba¹, Seishiro Aoki², Tadashi Kajita³, Hiroaki Setoguchi⁴, Yasuyuki Watano⁵, Syusei Sato⁶, Takashi Tsuchimatsu⁵

¹Chiba Univ., ²Univ. Tokyo, ³Univ. Ryukyus, ⁴Kyoto Univ., ⁵Chiba Univ., ⁶Tohoku Univ.

P12 Phylogenetic analysis of rhizobia isolated from alpine legume *Hedysarum vicioides* in Japan

*Shimpei Hasegawa¹, Tomohiro Kawai², Naoto Seo³, Shusei Sato⁴, Kazufumi Yazaki³, Kojiro Takanashi^{2, 5}

¹Grad. Sch. Sci. and Tech., Shinshu Univ., ²Faculty Sci., Shinshu Univ., ³RISH, Kyoto Univ., ⁴Grad. Sch. Life Sci., Tohoku Univ., ⁵IMS, Shinshu Univ.

P13 Nodulation of *Aeschynomene indica* by *Ralstonia* sp., a β -proteobacterium

*Shingo Hata¹, Tesshu Tamai¹, Takamasa Suzuki², Aiko Tanaka^{1, 3}

¹Ryukoku Univ., ²Chubu Univ., ³Nagoya Univ.

P14 Adaptation of USDA110-type *Bradyrhizobium diazoefficiens* to soil environments

*Ryota Noda, Masayuki Sugawara, Kiwamu Minamizawa

Grad. Sch. Life Sci., Tohoku Univ.

P15 N₂O reductase activity of indigenous isolates belonging to USDA110 type in *Bradyrhizobium diazoefficiens*

*Genki Iwasaki, Arthur Fernandes Siqueira, Cristina Sánchez Gómez, Ryouta Noda, Masayuki Sugawara, Kiwamu Minamisawa

Grad. Sch. Life Sci., Tohoku Univ.

P16 Genome analysis of *Bacillus velezensis* S141 promoting symbiotic nitrogen fixation of soybean with *Bradyrhizobium diazoefficiens* USDA110

Surachat Sibponkrung¹, *Takahiko Kondo², Panlada Tittabutr¹, Nantakorn Boonkerd¹, Neung Teaumroong¹, Ken-ichi Yoshida²

¹Suranaree Univ. Technol., ²Grad Sch Sci., Technol., Innov., Kobe Univ.

P17 Isolation and characterization of nitrogen-fixing bradyrhizobia from sorghum roots

*Takashi Morikawa¹, Shintaro Hara¹, Sawa Hara¹, Tsuyoshi Tokunaga², Kiwamu Minamisawa¹

¹Grad. Sch. Life Sci., Tohoku Univ., ²EARTHNOTE Co. Ltd.

P18 *nif* gene organization and N₂-fixing ability of bradyrhizobial isolates from sorghum root

*Sawa Hara¹, Takashi Morikawa¹, Shintaro Hara¹, Masayuki Sugawara¹, Junichi Yoneda², Tsuyoshi Tokunaga², Kiwamu Minamisawa¹

¹Grad. Sch. Life Sci., Tohoku Univ., ²EARTHNOTE Co. Ltd.

P19 Bradyrhizobial *nifV* gene functions on nitrogen fixation under free living and symbiotic state

*Shun Hashimoto¹, Jenjira Wongdee², Teerana Greetatorn², Pongpan Songwat², Kohki Goto¹, Eric

Giraud³, Panlada Tittabutr², Neung Teaumroong², Ken-ichi Kucho¹, Toshiki Uchiumi¹

¹Grad. Sch. Sci. Eng., Kagoshima Univ., ²Suranaree Univ. Technol., ³LTMS, INRA.

P20 Gibberellin positively regulates Paris-type arbuscular mycorrhizal symbiosis

*Takaya Tominaga¹, Chihiro Miura², Naoya Takeda³, Yuri Kanno⁴, Yoshihiro Takemura², Mitsunori Seo⁴, Masahide Yamato⁵, Hironori Kaminaka²

¹Dept. Agr. Sci., Grad. Sch. Sust. Sci., Tottori Univ., ²Fac. Agr. Tottori Univ., ³Sch. Sci. Tech., Kansei Gakuin Univ., ⁴RIKEN CSRS, ⁵Fac. Edu., Chiba Univ.

P21 Induction of rice AM symbiosis-related genes by a partially *N*-deacetylated chitin trimer from *Rhizophagus irregularis*

*Koyo Nojima, Kohki Akiyama

Osaka Pref. Univ.

P22 Bacterial community shift in soybean shoot by inoculation of *Metylobacterium* sp. AMS5

*Shintaro Hara¹, Masatoshi Matusda², Sawa Hara¹, Kiwamu Minamisawa¹

¹ Grad. Sch. Life Sci., Tohoku Univ., ²Konpon-ken

P23 Induction of heterophylly and variation of plant-associated bacterial communities in semi-aquatic plant *Rorippa aquatica*

*Manabu Itakura, Seisuke Kimura, Kaori Kaminoyama, Takakazu Kaneko

Kyoto Sangyo Univ.

P24 Characterization of growth of germinated rice with different accumulated temperatures coated powders containing *Bacillus pumilus* TUAT1 and zeolite

*Shin-ichiro Agake¹, Artigas Ramirez Maria Daniela², Katsuhiko Kojima³, Taiichiro Ookawa³, Naoko Ohtsu³, Tadashi Yokoyama³

¹Grad. Sch. Agri, Tokyo Univ. Agri. Technol. ²Uni. Grad. Sch. Agri, Tokyo Univ. Agri. Technol., ³Inst. Agri. Tokyo Univ. Agri. Technol.

P25 Genetic diversity of *Epichloë* endophytes isolated from *Elymus* species in Tottori

*Naori Izu¹, Hisashi Tsujimoto², Wayne R. Simpson³, Richard D. Johnson³, Yasunori Akagi⁴, Motoichiro Kodama⁴

¹GSSS, Tottori Univ., ²ALRC, Tottori Univ., ³AgResearch, N. Z., ⁴UGSAS, Tottori Univ.

P26 Growth promoting effect of *Burkholderia vietnamiensis* in different plant species

*Rina Shinjo, Aiko Tanaka, Motohiko Kondo

Grad. Sch. Bioagricultur Sci., Nagoya Univ.

P27 PGPRs associated with different Venezuelan legumes

*Artigas R., Maria D.¹, Shin-ichiro Agake², España Mingrelia³, Naoko Ohkama-Ohtsu⁴, Tadashi Yokoyama⁵

¹Uni. Grad. Sch. Agri., Tokyo Univ. Agri. Technol., ²Grad. Sch. Agri., Tokyo Univ. Agri. Technol.,
³Inst. Adv. Studies (IDEA-Venezuela), ⁴Inst. Agri., Tokyo Univ. Agri. Technol., ⁵Inst. Agri., Tokyo Univ. Agri. Technol.

P28 Inoculation effects of root-associated endophyte on legume

*Yoshikazu Shimoda¹, Kazuhiko Narisawa²

¹NIAS/NARO, ²Ibaraki Univ.

P29 The effect of non-structural carbohydrate on endophytic nitrogen fixation in rice

*Takanori Okamoto, Rina Shinjo, Aiko Tanaka, Daisuke Sugiura, Motohiko Kondo

Grad. Sch. Bioagri. Sci., Nagoya Univ.

P30 Mechanism of rice endophytic bradyrhizobial cell differentiation and its role on nitrogen fixation

*Teerana Greetatorn¹, Shun Hashimoto², Panlada Tittabutr¹, Toshiki Uchiumi², Neung Teaumroong¹

¹Suranaree Univ. Technol., ²Grad. Sch. Sci. Eng., Kagoshima Univ.

P31 Role of morphological change in *Azospirillum* sp. in early interaction with onion

*Leidong Hong^{1,2}, Yoshitake Orikasa^{1,2}, Hisayo Sakamoto¹, Takuji Ohwada^{1,2}

¹OUAVM, ²UGAS, Iwate Univ.

P32 Analysis of symbiotic genes expression induced by *Glycine max* cv. L323 and *Sinorhizobium* sp.H49 interaction under salt stress condition

*Misaki Kubota¹, Sayuri Hagita¹, Tetsuya Akatsu¹, Norihiko Tomooka², Naoko Ohkama-Ohtsu³, Tadashi Yokoyama³

¹Grad. Sch. Agr. Inst. Agr., Tokyo Univ. Agr. Technol., ²Nat. Agr. Food Res. Org. (NARO), ³Inst. Agri., Tokyo Univ. Agri. Technol.

P33 Effects of ALA-synthase co-expression on mesorhizobial mono functional catalase holoenzyme synthesis in *Escherichia coli*

*Honami Miura, Riho Shirai, Miwa Asano, Hiroshi Fujii, Kazuhiko Saeki

Nara Women's Univ.

P34 Mutational analysis of an iron-sulfur protein synthesis gene in *Sinorhizobium meliloti*

Shohei Sasaki, Kiwamu Minamisawa, *Hisayuki Mitsui

Grad. Sch. Life Sci., Tohoku Univ.

P35 Exploring for a ligand of the ALB1 protein based on the *Lotus japonicus* and *Mesorhizobium loti* co-expression network

*Tsuneo Hakoyama¹, Yoshikazu Shimoda², Makoto Hayashi¹

¹Riken CSRS, ²NARO NIAS

P36 Functional investigation of a PH/BEACH/WD domain protein CRINKLE on the root nodule symbiosis

*Aya Shimomura, Keisuke Yokota, Atsuko Hirota, Takashi Soyano, Makoto Hayashi

RIKEN

P37 A novel regulator of root nodule symbiosis

*Akihiro Yamazaki¹, Akira Miyahara², Miwa Nagae², Yosuke Umhara², Kiminori Toyooka¹ Makoto Hayashi¹

¹RIKEN, ²NIAS

P38 Genetic analysis of quantitative traits for nodulation of soybeans in a field

*Yosuke Umehara¹, Yoshikazu Shimoda¹, Masaki Hayashi², Akito Kaga³, Fukuyo Tanaka², Yoshinari Ohwaki², Masao Ishimoto³, Makoto Hayashi⁴

¹NIAS / NARO, ²CARC / NARO, ³NICS / NARO, ⁴CSRS / RIKEN

P39 Effects of plant hemoglobin and bacterial flavohemoglobin on symbiotic nitrogen fixation

*Mitsutaka Fukudome¹, Yusuke Maesako¹, Eri Watanabe¹, Sayaka Higashi¹, Ryujiro Imaizumi², Toshio Aoki², Toshiki Uchiumi¹

¹Grad. Sch. Sci. Eng., Kagoshima Univ., ²Grad. Sch. Bioresource Sci., Nihon Univ.

P40 Introduction of root trait to *Lotus japonicus* by interspecific hybridization with super-root derived from *Lotus corniculatus*

Rinda Puspasari¹, *Masatsugu Hashiguchi², Ryoma Ushio², Genki Ishigaki², Hidenori Tanaka², Ryo Akashi^{1,2}

¹Interdiscip. Grad. Sch. Agri. Eng., Univ. Miyazaki, ²Fac. Agri., Univ. Miyazaki

P41 Outer membrane vesicles production of *Mesorhizobium japonicum* MAFF303099 and plant response

*Junpei Waki, Mitsutaka Fukudome, Toshiki Uchiumi, Masahito Hashimoto
Grad. Sch. Sci. Eng., Kagoshima Univ.

P42 Type 3 secretion system effectors of *Bradyrhizobium elkanii* USDA61 induces multiple immune responses for *Lotus japonicus*

*Shohei Kusakabe¹, Takakazu Kaneko², Michiko Yasuda³, Hiroki Miwa³, Shin Okazaki³, Kazuhiko Saeki⁴, Shusei Sato¹

¹Tohoku Univ., ²Kyoto Sangyo Univ., ³Tokyo Univ. Agri. Technol., ⁴Nara Women's Univ.

P43 Elucidation of the molecular mechanism of symbiotic incompatibility induced by a rhizobial effector NopP

*Iori Imamura¹, Masayuki Sugawara¹, Hitoshi Kondo¹, Motonori Matsusaki², Shingo Kanemura², Kenji Inaba², Hisayuki Mitsui¹, Kiwamu Minamisawa¹

¹Grad. Sch. Life Sci., Tohoku Univ., ²Inst. Multidiscipl. Res. Adv. Materials, Tohoku Univ.

P44 Chitin nanofiber promotes symbiotic nitrogen fixation in *Lotus japonicus* nodules

*Mamu Gonnami¹, Yukiko Isowa², Sarasa Takashima², Naoya Takeda³, Mayumi Egusa², Shinsuke Ifuku⁴, Hironori Kaminaka²

¹Dept. Agr. Sci., Grad. Schl. Sust. Sci., Tottori Univ., ²Fac. Agr., Tottori Univ., ³Schl. Sci. Tech., Kwansai Gakuin Univ., ⁴Grad. Schl. Eng., Tottori Univ.

P45 A novel quorum sensing-dependent regulation of the *hrp* genes expression in *Ralstonia solanacearum* strain OE1-1

*Kazusa Hayashi¹, Wakana Senuma¹, Akinori Kiba¹, Ohnishi Kouhei¹, Kai Kenji², Yasufumi Hikichi¹

¹Kochi Univ., ²Osaka Pref. Univ.

P46 His at the 230th amino acid of the sensor kinase PhcS recognizing the quorum sensing signal

*Wakana Senuma¹, Kazusa Hayashi¹, Akinori Kiba¹, Kouhei Ohnishi¹, Kai Kenji²,

Yasufumi Hikichi¹

¹Kochi Univ., ²Osaka Pref. Univ.

P47 Effect of polymorphism of symbiotic nitrogen fixation related gene *SEN1* on the phenotype of leguminous plants

*Akihiro Suzuki¹, Yuka Egami², Satomi Kawano², Takahiro Nakao², Ryouta Chijiwa¹, Natsumi Nakashima¹, Katsuya Harada², Hidenori Kawazumi², Satoshi Watanabe¹, Toyooki Anai¹, Susumu Arima¹, Norio Suganuma³

¹Saga Univ., ²Saga Univ. ³Aichi Univ. Edu.