

PROGRAMME

9 – 11 September 2015
DECHEMA-Haus · Frankfurt am Main
Germany

Bioflavour 2015
International Conference on Flavour
and Fragrance Biotechnology

www.bioflavour-conference.com



SCIENTIFIC COMMITTEE

Jules Beekwilder	Plant Research International, Wageningen/NL
Ralf G. Berger	University of Hanover/D
Jörg Bohlmann	University of British Columbia, Vancouver/CAN
Gustavo M. de Billerbeck	INSA Toulouse/F
Paul Chambers	The Australian Wine Research Institute Ltd, Adelaide/AUS
Jens Schrader	DECHEMA Research Institute, Frankfurt/D
Wilfried Schwab	TU München/D
Matthias Wüst	University of Bonn/D
Holger Zorn	University of Giessen/D

VENUES & BUS SHUTTLE

NOTE: On Wednesday, 9 September 2015, the lectures of the **JOINT SESSION of the 2nd European Conference on Natural Products – ECNP** will take place at the University of Frankfurt at Campus Westend.

A bus transport will be provided, departure time 11:45 from DECHEMA to Campus Westend.

Please see details at programme page 6.

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KEYNOTE LECTURES

KEYNOTE LECTURES

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Wednesday, 9 September 2015, 13:00

(at venue Campus Westend)



Jörg Bohlmann

University of British Columbia, Vancouver/CDN

Using genomics approaches to discover terpenoid pathway enzymes in non-model systems

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Wednesday, 9 September 2015, 18:30



Thomas Hofmann

TU München/D

Nature's chemical signatures of smell

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Thursday, 10 September 2015, 09:00



Michel Schalk

Firmenich SA, Geneva/CH

Metabolic engineering of the terpene biosynthetic pathway for the production of flavor and fragrance ingredients

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Thursday, 10 September 2015, 15:00



Jutta Heim

Evolva SA, Reinach/CH

Bio-production of small flavor- and fragrance molecules in baker's yeast

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Friday, 11 September 2015, 09:00



Chris Curtin

The Australian Wine Research Institute Ltd, Adelaide/AUS

The good, the bad (and the ugly): volatile sulfur compound metabolism in *Saccharomyces cerevisiae*

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Friday, 11 September 2015, 11:50




Gerhard Krammer

Symrise AG, Holzminden/D

Recent advances in the authenticity control of bioflavours

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LECTURE PROGRAMME

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11:00 Registration I for Bioflavour 2015 at DECHEMA-Haus, Theodor-Heuss-Allee 25	
11:45 Bus transfer from DECHEMA-Haus to University of Frankfurt – Campus Westend – approx. 30 min Address: Grüneburgplatz 1, 60323 Frankfurt am Main	
12:15 Possibility for lunch at University of Frankfurt, Campus Westend – please register	
JOINT SESSION of the 2nd European Conference on Natural Products – ECNP & Bioflavour 2015 Volatile natural products / chemical communication (last session of 2 nd ECNP)	
Please note: The session on Wednesday, 9 September 2015, will take place at the University of Frankfurt, Campus Westend	
<i>University Frankfurt, Campus Westend</i>	
<i>Chair: J. Schrader, DECHEMA Research Institute, Frankfurt am Main/D</i>	
13:00 KEYNOTE LECTURE 1 Using genomics approaches to discover terpenoid pathway enzymes in non-model systems J. Bohlmann, University of British Columbia, Vancouver/CDN	19
13:45 INVITED LECTURE 1 Got mint? Navigating the complexities of essential oil biosynthesis B. Lange, A. Ahkami, S.R. Johnson, N. Srividya, Washington State University, Pullman, WA/USA	20
14:15 Bacterial volatiles – new compounds and functions S. Schulz, U. Groenhagen, L. Ziesche, H. Bruns, A.-L. von Rymon-Lipinski, M. Maczka, S. Ravella, S. Kern, TU Braunschweig/D	21
14:45 Engineering of <i>Streptomyces venezuelae</i> for heterologous production of terpenoids R.M. Phelan, University of California/USA; O.N. Sekurova, Norwegian University of Science and Technology, Trondheim/NO; J.D. Keasling, University of California/USA; S. Zotchev, Norwegian University of Science and Technology, Trondheim/NO	22
15:15 Coffee Break	
15:45 Characterization of novel communication systems from entomopathogenic bacteria D. Kresovic, N.J. Tobias, Universität Frankfurt am Main/D; S. Brameyer, R. Heermann, Universität München/D; H.B. Bode, Universität Frankfurt am Main/D	23
15:55 Clostrubins, novel polyphenolic polyketide antibiotics from soil-derived and plant-pathogenic clostridium species K. Ishida, G. Shabuer, S. Pidot, U. Knüpfer, Chr. Hertweck, Leibniz Institute for Natural Product Research and Infection Biology, Jena/D	24
16:05 Production of short fatty acid in <i>S. cerevisiae</i> by rational engineering J. Gajewski, Universität Frankfurt am Main/D	25
16:15 Correlation between nudicaulin biosynthesis and volatile composition in <i>Papaver nudicaule</i> flowers A.-Chr. Warskulat, J. Martinez-Harms, B. Dudek, B. Schneider, MPI for Chemical Ecology, Jena/D	26
16:25 Closing remarks ECNP	
16:30 End of ECNP	
17:00 Bus transfer to DECHEMA – approx. 30 min	

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18:15 Welcome Address J. Schrader, DECHEMA Research Institute, Frankfurt am Main/D	
18:20 A short history of bioflavour R.G. Berger, University of Hanover/D	
Evening Lecture	
<i>Chair: J. Schrader, DECHEMA Research Institute, Frankfurt am Main</i>	
18:30 KEYNOTE LECTURE 2 Nature's chemical signatures of smell T. Hofmann, A. Dunkel, TU München/D; M. Steinhaus, M. Kotthoff, B. Nowak, D. Krautwurst, P. Schieberle, Deutsche Forschungsanstalt für Lebensmittelchemie - Leibniz Institut, Freising-Weihenstephan/D	27
19:10 Get together / Poster Discussion	
21:00 End of day 1	



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8:30 Registration III	<i>DECHEMA-Haus</i>
<i>Chair: R.G. Berger, University of Hanover/D</i>	
Session: From plant biosynthesis to microbial cell factories I	
9:00 KEYNOTE LECTURE 3	28
Metabolic engineering of the terpene biosynthetic pathway for the production of flavor and fragrance ingredients	
<i>M. Schalk, Firmenich SA, Geneva/CH</i>	
9:40 Alternative substrates as tools for terpenoid biosynthesis: multiproduct terpene synthases	29
<i>A. Vattekkatte, N. Gatto, T. Köllner, W. Boland, Max Planck Institute for Chemical Ecology, Jena/D</i>	
10:00 Production of β-ionone by combined expression of carotenogenic and plant CCD1 genes in <i>Saccharomyces cerevisiae</i>	30
<i>J. Lopez, K. Essus, Universidad Católica de Chile, Santiago/RCH; V. Siewers, Chalmers University of Technology, Gothenburg/S; J. Herzog, Universidad Católica de Chile, Santiago/RCH; J. Nielsen, Chalmers University of Technology, Gothenburg/S; E. Agosin, Universidad Católica de Chile, Santiago/RCH</i>	
10:20 Engineering of <i>E. coli</i> for enantiomeric pure (R)-alpha-Ionone production	31
<i>K. Schullehner, I. Torres-Monroy, P. Welters, G. Jach, Phytowelt GreenTechnologies GmbH, Cologne/D</i>	
10:40 Coffee Break and Poster Discussion	
<i>Chair: J. Bohlmann, University of British Columbia, Vancouver/CDN</i>	
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De novo synthesis of vanillin in the vanilla orchid <i>Vanilla planifolia</i>	
<i>N.J. Gallage, B.L. Møller, University of Copenhagen/DK</i>	
11:40 INVITED LECTURE 3	33
Creating novel flavor and fragrance compounds through high throughput diversity generation and screening	
<i>S. Reisinger, Amyris Inc., Emeryville, CA, USA</i>	
12:10 Production of the monoterpene limonene in yeast and plants	34
<i>E. Jongedijk, Wageningen University/NL; K. Cankar, BU Bioscience, Wageningen UR/NL; S. van der Krol, H. Bouwmeester, Wageningen University/NL; J. Beekwilder, BU Bioscience, Wageningen UR/NL</i>	
12:30 Flavor and fragrance terpene production with a dual isoprenoid pathway	35
<i>M. Hümbelin, DSM Nutritional Products, Kaiseraugst/CH; J. Beekwilder, D. Bosch, Plant Research International, Wageningen/NL; F. Fluitman, V.G. Guadalupe-Medina, E. Melillo, T. Sonke, R. Trokowski, N. Willems, G. Lentzen, Isobionics, Geleen/NL</i>	
12:50 The Cultured Rose: designing complex fragrances in an organism engineering foundry	36
<i>P. Boyle, E. Leonard, Y. Pechersky, R. Shetty, Ginkgo Bioworks, Boston/USA</i>	
13:10 Lunch	
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<i>Chair: G.M. de Billerbeck, INSA Toulouse and INP-ENSAT/F</i>	
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Bio-production of small flavor- and fragrance molecules in baker's yeast	
<i>J. Heim, Evolva SA, Reinach/CH</i>	
15:40 Genetics of flavour production in the yeast <i>Kluyveromyces marxianus</i>	38
<i>J. Morrissey, L. Gethins, J. Varela, P. Ross, University College Cork/IRL; M. Rea, C. Stanton, Teagasc Research Centre, Moorepark, Cork/IRL</i>	
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<i>P. Xu, J. Ni, F. Tao, Shanghai Jiao Tong University/CHN</i>	
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<i>I. Gonda, N. Galpaz, Agricultural Research Organization, Ramat Yishay/IL; D.S. Tov, Tel-Aviv University/IL; V. Portnoy, S. Lev, E. Bar, R. Davidovich-Rikanati, Agricultural Research Organization, Ramat Yishay/IL; Y. Xu, M. Huang, Cornell University, Ithaca, NY/USA; O. Barad, 3NRGENE, Ness Ziona/IL; J. Burger, A.A. Schaffer, Y. Tadmor, Agricultural Research Organization, Ramat Yishay/IL; Z. Fei, J.J. Giovannoni, Cornell University, Ithaca, NY/USA; A. Fait, Ben-Gurion University of the Negev, Sdeh Boker/IL; N. Katzir, E. Lewinsohn, Agricultural Research Organization, Ramat Yishay/IL</i>	
17:40 Phenomic and transcriptomic analysis of 2-Phenylethanol tolerance in <i>Saccharomyces cerevisiae</i>	43
<i>H. Zhang, INSA, CNRS UMR5504, INRA UMR792, Toulouse/F; M. Rigoulet, Laboratoire d'étude du métabolisme énergétique cellulaire, Bordeaux/F; A. Kitanovic, S. Wölfl, Institut für Pharmazie und Molekulare Biotechnologie, Heidelberg/D; N. Rozès, A. Borrull Riera, Rovira i Virgili University, Tarragona/E; H. Milhem, INSA Génie Mathématique et Modélisation, Toulouse/F; S. Déjean, UPS Institut de Mathématiques, Toulouse/F; J.M. François, P. Blanc, INSA, CNRS UMR5504, INRA UMR792, Toulouse/F; G.M. de Billerbeck, INSA, CNRS UMR5504, INRA UMR792, INP-ENSAT, Toulouse/F</i>	
18:00 Metabolite profiling and statistical systems biology – a new approach to understand the formation of fragrant resins in agarwood	45
<i>S. Sen, M. Dehingia, N.C. Talukdar, M. Khan, Institute of Advanced Study in Science and Technology, DST, Guwahati, Assam/IND</i>	
18:20 Production of secondary metabolites via tissue culture of <i>Aquilaria</i>	46
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C. Curtin, T. Cordente, The Australian Wine Research Institute, Adelaide/AUS; G. Winter, The Australian Wine Research Institute, Adelaide/AUS and University of New England, Armidale/AUS; C. Abrahamse, M. Solomon, D. Capone, P. Sternes, A. Borneman, The Australian Wine Research Institute, Adelaide/AUS	
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<u>M.B. Hirst</u> , C.L. Richter, E. & J. Gallo Winery, Modesto/USA	
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S. Holt, M. Remedios Foulquié Moreno, J. Thevelein, Katholieke Universiteit Leuven, Leuven-Heverlee/B	
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<u>M.A. Fraatz</u> , Y. Zhang, H. Zorn, Justus Liebig University Giessen/D	
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<u>M. Majcher</u> , K. Myszka, A. Grygier, H. Jelen, Poznan University of Life Sciences/PL	
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<i>Chair: M. Wuest, University of Bonn/D</i>	
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U. Schäfer, J. Kiefl, T. Geißler, K. Geißler, M. Kassing, J. Ley, G. Krammer, Symrise AG, Holzminden/D	
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Improved rapid authentication of vanillin using $\delta^{13}\text{C}$ and $\delta^2\text{H}$ values	
<u>M. Greule</u> , A. Mosandl, F. Keppler, Ruprecht Karls University Heidelberg/D	
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K. Riedel, K. Rudert, BRAIN AG, Zwingenberg/D; M. Salomon, Sirion Biotech GmbH, Martinsried/D; S. Becker, Universität München/D; <u>M. Krohn</u> , BRAIN AG, Zwingenberg/D	
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<u>B. Nowak</u> , D. Krautwurst, Deutsche Forschungsanstalt für Lebensmittelchemie, Freising/D	
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F. Bönisch, Technische Universität München, Freising/D; J. Frotscher, Geisenheim University/D; S. Stanitzek, University of Bonn/D; E. Rühl, Geisenheim University/D; M. Wüst, University of Bonn/D; O. Bitz, Geisenheim University/D; <u>W. Schwab</u> , Technische Universität München, Freising/D	
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<u>R. Marriott</u> , L. Martin, Bangor University, Gwynedd/UK	
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