



## 7<sup>th</sup> IUFR0 International Workshop GTPI-2022

“Understanding the genetics of forest tree-antagonist interactions in a changing world “

Pontevedra, Galicia, Spain. September 12<sup>th</sup> - 16<sup>th</sup> 2022

### Day 0 - ARRIVAL: Sunday September 11, 2022

|       |       |                                                                                |
|-------|-------|--------------------------------------------------------------------------------|
| 18:00 | 20:30 | Registration's Open at the venue centre (Casino de Pontevedra in the old town) |
|       |       | Uploading presentations for Monday morning                                     |
| 18:00 | 20:30 | Welcome drinks and Tapas in the Casino                                         |
| 20:30 | 22:00 | Social time in a cash bar nearby                                               |

### Day 1: Monday September 12, 2022

|      |      |      |                                                                                                                        |
|------|------|------|------------------------------------------------------------------------------------------------------------------------|
| 8:00 | 0:30 | 8:30 | Registration and uploading presentations                                                                               |
| 8:30 | 0:30 | 9:00 | Welcome, Opening ceremony by the Major of Pontevedra                                                                   |
| 9:00 | 0:30 | 9:30 | <b>Invited talk</b> (20' + 10' q/a)<br><b>Juan Antonio Martín.</b> Breeding for Dutch elm disease resistance in Spain. |

#### SESSION 1 (15min. Talks + 20 min Discussion)

**Moderator: Luis Sampedro**

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|-------|------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:30  | 0:15 | 9:45  | <b>Talk 1</b> Improving the resilience of UK woodlands to pathogens and climate change. Rômulo Carleial, Carey Metherringham, Louise Gathercole, Gabriele Nocchi, Daniel Woods, Mike Charters, Nathan Brown, Richard Nichols, Sandra Denman, Richard Buggs                                                   |
| 9:45  | 0:15 | 10:00 | <b>Talk 2</b> Evaluation of the fungicide treatments for the sustainable management of <i>P. pinaster</i> trees infected with <i>B. xylophilus</i> . López-Villamor <sup>1</sup> , Adrián <sup>1</sup> ; Nunes da Silva <sup>2</sup> , Marta <sup>2</sup> ; W. Vasconcelos <sup>3</sup> , Marta <sup>3</sup> |
| 10:00 | 0:15 | 10:15 | <b>Talk 3</b> Closing the gap between forest pest emergence and global change: a case study of international exchange of expert local knowledge. Williams, Geoff; Davel, Miguel; de Errasti, Andrés; Gomez, Cecilia; Pildain, Belén; Snieszko, Richard                                                       |
| 10:15 | 0:20 | 10:35 | <b>Discussion</b>                                                                                                                                                                                                                                                                                            |
| 10:35 | 0:40 | 11:15 | <i>Coffee Break and posters</i>                                                                                                                                                                                                                                                                              |

|       |      |       |                                                                 |                                                                                                                                                                                                                                                                                   |
|-------|------|-------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:15 | 0:30 | 11:45 | <b>PANELS session 1</b> (4 minutes presentation each, 6 panels) |                                                                                                                                                                                                                                                                                   |
|       |      |       | <b>Poster 1</b>                                                 | Advancing prediction of pitch canker resistance in improved slash pine ( <i>Pinus elliottii</i> ). Meinecke, Colton D.; Quesada, Tania; Villari, Caterina*; Brawner, Jeremy T.                                                                                                    |
|       |      |       | <b>Poster 2</b>                                                 | ResEsche - Propagation and Testing of Hymenoscyphus-tolerant ash trees from Mecklenburg-Western Pomerania and establishment of a seed orchard. Past, Franziska; Bubner, Ben; Schneck, Volker; Schrader, Marco; Röhe, Peter (ret.)                                                 |
|       |      |       | <b>Poster 3</b>                                                 | Advances in the Galician breeding programs of <i>Pinus pinaster</i> and <i>Pinus radiata</i> to control the Pine Wilt Disease. Díaz, Raquel1; Alonso, Margarita1; Prada, E.1, Torres, Esteban, Villar, Lucía, Menéndez-Gutiérrez, María                                           |
|       |      |       | <b>Poster 4</b>                                                 | Comparison of Outbreak of Larvae of Pyralidae on Seed Cones between Seed Orchard and Natural Population of <i>Abies nephrolepis</i> . Kim, Sunjeong*; Lee, Hye-Jin; Kim, Yang-Gil; Lee, Chae-Bin; Lee, Dayoung; Kim, Su-Vi; Kim, In-Sik; Lee, Kyoungmi; Kang, Kyu-Suk             |
|       |      |       | <b>Poster 5</b>                                                 | The first recorded thuja aphid ( <i>Cinara</i> sp.) damage to the vulnerable subalpine conifer, <i>Thuja koraiensis</i> Nakai. Lee1, Hye-Jin1,*; Kim2, Sunjeong2; Kim3, Yang-Gil3; Lee4, Dayoung4; Kang5, Kyu-Suk5                                                                |
|       |      |       | <b>Poster 6</b>                                                 | New perspectives for the evaluation of resistance levels against bands in species of the genus <i>Pinus</i> . N. Mesanza, R. Raposo, M. Hernández, D. Fariña-Flores, A. Sáez de Zeraín, E. Iturrirxa*                                                                             |
|       |      |       | <b>SESSION 2</b> (15min. Talks + 20 min Discussion)             |                                                                                                                                                                                                                                                                                   |
|       |      |       | <b>Moderator:</b>                                               | <b>Malin Elfstrand</b>                                                                                                                                                                                                                                                            |
| 11:45 | 0:15 | 12:00 | <b>Talk 4</b>                                                   | Exploring variation in susceptibility to <i>Phytophthora ramorum</i> in Japanese larch ( <i>Larix kaempferi</i> ). Dun, Heather F.*, Clarke, Toni-Kim., Mackay, John J., Green, Sarah.                                                                                            |
| 12:00 | 0:15 | 12:15 | <b>Talk 5</b>                                                   | Resistance against <i>Hymenoscyphus fraxineus</i> : The joint project FraxGen and first results on paternity tests for exploring host genetic architecture. Bubner, Ben; Past, Franziska; Krautwurst, Melina; Schneck, Volker; Müller, Niels                                      |
| 12:15 | 0:15 | 12:30 | <b>Talk 6</b>                                                   | Detection of resistance candidate genes to pine wood nematode using transcriptome analysis of <i>Pinus densiflora</i> and <i>Pinus strobus</i> . Kim, Yang-Gil; Lee, Dayoung; Lee, Hye-Jin; Kim, Sunjeong; Kim, Su-Vi; Lee, Jae-woo; Shim, Donghwan; Park, Il-Kwon; Kang, Kyu-Suk |
| 12:30 | 0:20 | 12:50 | <b>Discussion</b>                                               |                                                                                                                                                                                                                                                                                   |
| 13:00 | 1:30 | 14:30 | <i>Stand-up Lunch at the Casino</i>                             |                                                                                                                                                                                                                                                                                   |
| 14:30 | 0:10 | 14:40 | General organization and logistics for day 1                    |                                                                                                                                                                                                                                                                                   |
| 14:40 | 0:30 | 15:10 | <b>PANELS session 2</b> (4 minutes presentation each, 6 panels) |                                                                                                                                                                                                                                                                                   |

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| <b>Poster 7</b>  | Population genetics of common ash ( <i>Fraxinus excelsior</i> L.) in Germany with regard to ash dieback . Kunert, Gregor; Dounavi, Aikaterini; Gailing, Oliver; Budde, Katharina B.; Shrestha, Karuna Nehls, Henrike;                                                                                                                                               |
| <b>Poster 8</b>  | Resistance and sensitivity to inoculation with pine wood nematode of six <i>Pinus</i> species. Lee, Dayoung; Kim, Yang-Gil; Lee, Hye-Jin; Kim, Sunjeong; Kim, Su-Vi; Lee, Jae-woo; Shim, Donghwan; Park, Il-Kwon; Kang, Kyu-Suk                                                                                                                                     |
| <b>Poster 9</b>  | Intraspecific genetic variation and plasticity of constitutive and induced resin flow in maritime pine. Rafael Zas <sup>1</sup> , Carla Vázquez-González <sup>1</sup> , Xosé López-Goldar <sup>1</sup> , Alejandro Solla <sup>2</sup> , María Vivas <sup>2</sup> , Vicente Rozas <sup>3</sup> , María Josefa Lombardero <sup>4</sup> and Luis Sampedro <sup>1</sup> |
| <b>Poster 10</b> | Investigation of promoter regions in Scots pine combining linear DNA amplification with massive parallel sequencing. Šķipars <sup>1</sup> , Vilnis; Ruņģis <sup>1</sup> , Dainis; Vivian-Smith <sup>2</sup> , Adam                                                                                                                                                  |
| <b>Poster 11</b> | Investigation of naturally occurring defence mechanisms in Sitka spruce to inform research into <i>Hylobius abietis</i> resistance. . Collier Harris, Barley Rose; Tumas, Hayley R; Ziad, Soufi; Woolliams, John A; McLean, J Paul; Lee, Steve; Cottrell, Joan E; Ilska, Joanna J; Lopez, Gustavo; MacKay, John;                                                    |
| <b>Poster 12</b> | A (Mobile) Armchair Quarterback's Sneaky Playbook: Employing Molecular Tools to Diagnose Plant Pathogens. Boggess, Sarah L.; Stackhouse, Tammy; Klingeman, William E.; Ginzel, Matthew D.; Gazis, Romina; Para, Pedro Pablo; Ony, Meher; Staton, Meg; Taylor, Adam; Piestch, Grace M.; Hadziabdic, Denita                                                           |

### SESSION 3 (15min. Talks + 20 min Discussion)

|       |      |       |                                                                 |                                                                                                                                                                                                                                                                                               |
|-------|------|-------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |      |       | <b>Moderator: Cate Villari</b>                                  |                                                                                                                                                                                                                                                                                               |
| 15:15 | 0:15 | 15:30 | <b>Talk 7</b>                                                   | Variation in susceptibility to pine pitch canker among 33 <i>Pinus pinaster</i> provenances. Raquel Díaz, Jorge Martín, Esteban Torres, Julio Diez-Casero                                                                                                                                     |
| 15:30 | 0:15 | 15:45 | <b>Talk 8</b>                                                   | Effects of the genetics and the application of methyl jasmonate and hylonox protector on tree resistance to the pine weevil in two widespread boreal conifer species.. Raul de la Mata <sup>1,2</sup> , Rafael Zas <sup>1</sup> , Luis Sampedro <sup>1</sup> and Adriana Puentes <sup>3</sup> |
| 15:45 | 0:15 | 16:00 | <b>Talk 9</b>                                                   | Infrared spectroscopy and machine learning for rapid host resistance screening. Pierluigi (Enrico) Bonello (1), Anna O. Conrad (2)                                                                                                                                                            |
| 16:00 | 0:20 | 16:20 | <b>Discussion</b>                                               |                                                                                                                                                                                                                                                                                               |
| 16:20 | 0:35 | 16:55 | <b>PANELS session 3 (4 minutes presentation each, 7 panels)</b> |                                                                                                                                                                                                                                                                                               |
|       |      |       | <b>Poster 13</b>                                                | Nutrient availability and herbivory alter defence-growth-reproduction trade-offs in a masting Mediterranean pine. Asier R. Larrinaga <sup>1,2</sup> , Luis Sampedro <sup>1</sup> , Rafael Zas <sup>1</sup>                                                                                    |

- Poster 14** PHOTOSYNTHESIS IN PLANTS OF *Eucalyptus benthamii* KEPT UNDER LED LIGHT AFTER RESTRICTION OF IRRIGATION. Navroski, Marcio Carlos<sup>1</sup>; Andrade, Ramon Silveira<sup>2</sup>; Pereira, Mariane de Oliveira<sup>3</sup>
- Poster 15** Selecting predictor variables for spatial analysis of a bark beetle outbreak. Pavel Mezei<sup>1</sup>, Rastislav Jakuš<sup>1,2</sup>
- Poster 16** Breeders environmental problem: finding resistant root rot clones . Helmersson, Andreas; Capador-Barreto, Hernan D.; Chaudhary, Rajiv; Lundén, Karl; Berlin, Mats; Stattin, Eva; Wu, Harry X.; Stenlid, Jan; Karlsson, Bo; Elfstrand, Malin.
- Poster 17** Genomic basis of pedunculate oak resistance to acute oak decline. Carleial, Rômulo; Brown, Nathan; Nichols, Richard; Denman, Sandra; Buggs, Richard
- Poster 18** Chemotyping European and Asian *Fraxinus*: understanding host defence mechanisms associated with resistance against the ash dieback pathogen *Hymenoscyphus fraxineus*.. Tolio, Beatrice; Sherwood, Patrick; Mateusz Liziniewicz; Marčiulytė, Diana; Cleary, Michelle
- Poster 19** Response of loblolly pine (*Pinus taeda*) secondary metabolites to the fungal associates of the southern pine beetle (*Dendroctonus frontalis*). de Soto, John G.; Brewer, Marin T.; Gandhi, Kamal J.K.; Klepzig, Kier D.; Severns, Paul M.; Sullivan, Brian T., Villari, Caterina\*

#### SESSION 4 (15min. Talks + 20 min Discussion)

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|----------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Moderator: Enrico Bonello</b> |                                                      |                                                                                                                                                                                                                                                                    |
| 17:00                            | 0:15                                                 | 17:15                                                                                                                                                                                                                                                              |
|                                  | <b>Talk 10</b>                                       | Predicting terpene profiles in the crown of pine trees using airborne hyperspectral imagery. Asier Rodriguez-Larrinaga <sup>1</sup> , GARCÍA MATEOS. Á.2, DUARTE NAVALÓN, M.2, FERNÁNDEZ MOVILLA, S.2, ANA CAO <sup>1</sup> , , ZAS, R.1, DEL BARRIO MARKAIDA, J.2 |
| 17:15                            | 0:15                                                 | 17:30                                                                                                                                                                                                                                                              |
|                                  | <b>Talk 11</b>                                       | Detecting fusiform rust resistance in loblolly pines using vibrational spectroscopy . Lim-Hing, Simone; Montes, Cristian; Walker, Trevor; Gandhi, Kamal J.K.; Payn, Kitt G.; Villari, Caterina*                                                                    |
| 17:30                            | 0:15                                                 | 17:45                                                                                                                                                                                                                                                              |
|                                  | <b>Talk 12</b>                                       | Comparative profiling of lodgepole and jack pine responses to infection by <i>Cronartium harknessii</i> . 1. Osadolor Samson, 2. Mayerhofer Marion, 3. McAllister Chandra, 4. Peery Rhiannon, 5. Zaharia Irina, 6. Dang Sophie, 7. Cooke Janice.                   |
| 17:45                            | 0:25                                                 | 18:10                                                                                                                                                                                                                                                              |
|                                  | <b>Discussion</b>                                    |                                                                                                                                                                                                                                                                    |
| 18:30                            |                                                      | 19:30                                                                                                                                                                                                                                                              |
|                                  | <b>Guided visit to Pontevedra</b>                    |                                                                                                                                                                                                                                                                    |
| 20:00                            | 1:30                                                 | 21:30                                                                                                                                                                                                                                                              |
|                                  | <i>Welcome social dinner at Hotel Galicia Palace</i> |                                                                                                                                                                                                                                                                    |

## Day 2: Tuesday September 14, 2022

|                                                     |      |       |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------|------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00                                                | 0:10 | 9:10  | Good morning & Logistics for day 2 and 3                                                                                                                                        |                                                                                                                                                                                                                                                                                                                         |
| <b>SESSION 5</b> (15min. Talks + 20 min Discussion) |      |       |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                         |
| <b>Moderator: John McKay</b>                        |      |       |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                         |
| 9:10                                                | 0:15 | 9:25  | <b>Talk 13</b>                                                                                                                                                                  | Genotype impact on the response of <i>Picea abies</i> to the artificial inoculation of <i>Heterobasidion parviporum</i> . Durodola, Blessing; Blumenstein, Kathrin; Terhonen, Eeva.                                                                                                                                     |
| 9:25                                                | 0:15 | 9:40  | <b>Talk 14</b>                                                                                                                                                                  | The firm tree does not fear the storm#- <i>Picea abies</i> with higher resistance to <i>Heterobasidion annosum</i> show more robust defenc responses. Capador-Barreto. Hernan D.; van Iersel, Guus; Brandström Durling, Mikael; Stenlid, Jan; Karlsson, Bo; Elfstrand, Malin*                                           |
| 9:40                                                | 0:15 | 9:55  | <b>Talk 15</b>                                                                                                                                                                  | Chemical defenses deployed by <i>Fraxinus pennsylvanica</i> against emerald ash borer and differential gene expression patterns associated with successful defense . Stanley, Robert K1; Cary, David2; Doran, Aletta2; Mason, Mary2; Staton, Margaret E3; Koch, Jennifer2; Jones, A. Daniel4; Romero-Severson, Jeanne1* |
| 9:55                                                | 0:15 | 10:10 | <b>Talk 16</b>                                                                                                                                                                  | Predicting qualitative and quantitative resistance to fusiform rust in loblolly pine families using integrated genomic and phenotypic host-pathogen data. Quesada, Tania*1, Smith, Katherine2, McKeever, Kathleen3, Davis, John M.1, Peter, Gary, F.1, Brawner, J.T.4                                                   |
| 10:10                                               | 0:20 | 10:30 | <b>Discussion</b>                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                         |
| 10:30                                               | 0:30 | 11:00 | <i>Coffee Break and posters</i>                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                         |
| 11:00                                               | 0:30 | 11:30 | <b>Invited talk #2</b> (20' talk + 10' q/a)<br><b>Jordi Voltas.</b> Adaptive syndromes in forest trees: A brief update on strategies and approaches based on provenance trials. |                                                                                                                                                                                                                                                                                                                         |
| <b>SESSION 6</b> (15min. Talks + 20 min Discussion) |      |       |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                         |
| <b>Moderator: Jeanne Romero-Svensson</b>            |      |       |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                         |
| 11:30                                               | 0:15 | 11:45 | <b>Talk 17</b>                                                                                                                                                                  | Mechanisms of pine disease susceptibility under experimental climate change. Ghosh, Soumya K. 1; Slot, Jason 1; Visser, Erik A. 2; Naidoo, Sanushka 2; Sovic, Michael G. 3; Conrad, Anna O. 1; Kyre, Bethany 1; Vijayakumar, Vinod 1; Bonello, Pierluigi (Enrico)* 1                                                    |
| 11:45                                               | 0:15 | 12:00 | <b>Talk 18</b>                                                                                                                                                                  | Seasonal variation in Norway spruce defense response to inoculation with bark beetle-associated bluestain fungi in relation to site conditions . Petter Öhrn1, Mats Berlin1, Jan-Olov Weslien1, Malin Elfstrand2, Audrius Menkis2, Paal Krokene3, and Anna Maria Jönsson4                                               |
| 12:00                                               | 0:15 | 12:15 | <b>Talk 19</b>                                                                                                                                                                  | Genotype by environment interaction in defensive chemistry of maritime pine. Rafael Zas1, Ana Cao1, Margarita Lema1, Gloria Bustingorri1, Roberto Touza1, F.J. Lario2, Luis Sampedro1                                                                                                                                   |

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|-----------------------------------------------------|------|-------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12:15                                               | 0:15 | 12:30 | <b>Talk 20</b>                      | Interaction of adelgids population with weather conditions and tree resistance. Xu, Jing; Justesen, Mathias Just; Nielsen, Ulrik Braüner                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 12:30                                               | 0:20 | 12:50 | <b>Discussion</b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 13:00                                               | 1:45 | 14:45 | <i>Stand-up Lunch at the Casino</i> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>SESSION 7</b> (15min. Talks + 20 min Discussion) |      |       |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                     |      |       | Moderator:                          | Geoff Williams                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 14:45                                               | 0:15 | 15:00 | <b>Talk 21</b>                      | Does carbon allocation and mobilization to chemical defenses affect tree survival during biotic and abiotic stress?. Erbilgin, Nadir                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 15:00                                               | 0:15 | 15:15 | <b>Talk 22</b>                      | Is there a role of terpenoids in systemic induced resistance in Austrian pine?. Ghosh, Soumya K.*; Ishangulyyeva, Guncha; Erbilgin, Nadir; Bonello, Pierluigi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 15:15                                               | 0:15 | 15:30 | <b>Talk 23</b>                      | Genetic variation for resistance to abiotic and biotic stresses in breeding populations of European forest trees. Raposo, Rosa 1; Auger-Rozenberg, Marie-Anne 2; Berlin, Mats 3; Buiteveld, Joukje 4; Cavers, Stephen 5; Chen, Zhiqiang 6; Copini, Paul 7; Dowkiw, Arnaud 8; Gonzalez-Martinez, Santiago C. 9; Grima-Pettenati, Jacqueline 10; Haapanen, Matti 11; Hayatgheibi, Haleh 12; Jorge, Véronique 13; Kärkkäinen, Katri 14; Kilpeläinen, Marja-Leena 15; Kujala, Sonja 16; Mounet, Fabien 17; Mutke, Sven 18; Nervo, Giuseppe 19; Papaix, Julien 20; Perry, Annika 21; Roques, Alain 22; Rozenberg, Philippe 23; Salonen, Juhani 24;Wu, Harry X 25; Alía, Ricardo 26; Ray, Duncan 27, Bastien, Catherine 28 |
| 15:30                                               | 0:15 | 15:45 | <b>Talk 24</b>                      | Genome-wide re-sequencing reveals the adaptive potential of European ash ( <i>Fraxinus excelsior</i> ). CORRECTION! Doonan, JM(1); Budde, KB(2); Lobo, A(1); Kosawang, C(1); Verbylaite, R(3); Brealey, J(4); Pliūra, A(3); Ulaszewski, B(5); Thomas, K(6); Konrad, H(7); Jørgensen, HJL(8); Seegmüller, S(6); Liziniewicz, M(9); Cleary, M(10); Nemesio-Gorritz, M(11); Fussi, B(12); Kirisits, T(13); Gilbert, T(14); Martin, M(4); Heuertz, M(15); Kjær, ED(1); Nielsen, LR(1)*.                                                                                                                                                                                                                                  |
| 15:45                                               | 0:20 | 16:05 | <b>Discussion</b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>SESSION 8</b> (15min. Talks + 20 min Discussion) |      |       |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                     |      |       | Moderator:                          | Paal Krokene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 16:15                                               | 0:15 | 16:30 | <b>Talk 25</b>                      | Combining new methods for increased plant protection. Berggren-Nieto, Kristina; Nordkvist, Michelle; Björkman, Christer; Klapwijk, Maartje; Puentes, Adriana                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 16:30                                               | 0:15 | 16:45 | <b>Talk 26</b>                      | Defense priming in Norway spruce: from field "vaccination" to underlying mechanisms. Paal Krokene, Samuel W. Wilkinson, Melissa H. Mageroy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 16:45                                               | 0:15 | 17:00 | <b>Talk 27</b>                      | Chemical-induced defence priming: effects on growth and defence in oak seedlings. Sanchez-Lucas, Rosa; Bosanquet, Jack; Raw, Mark; Pastor, Victoria; Luna, Estrella                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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|-------|------|-------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| 17:00 | 0:15 | 17:15 | <b>Talk 28</b>                                                                             | Transgenerational defence priming in <i>Pinus pinaster</i> against pest and pathogens. Jonas Oliva |
| 17:15 | 0:20 | 17:35 | Discussion                                                                                 | Heather F. Dun                                                                                     |
| 18:30 | 1:00 | 19:30 | <i>Wine testing at a winery in Pontevedra</i><br><i>Social time at a Pub in Pontevedra</i> |                                                                                                    |

### Day 3: Wednesday September 15, 2022

|      |  |       |                                                                                                     |
|------|--|-------|-----------------------------------------------------------------------------------------------------|
| 9:00 |  | 9:15  | Board on the boat at Pontevedra's Port                                                              |
| 9:15 |  | 19:00 | Field Trip to Atlantic Islands National Park - Ons Island<br>(Lunch and short guided tour included) |

### Day 4: Thursday September 16, 2022

|                                                      |      |       |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------|------|-------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00                                                 | 0:15 | 9:15  | Good morning & Logistics for the day 4 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>SESSION 9</b> (15min. Talks + 20 min Discussion)  |      |       |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Moderator: Heather F. Dun</b>                     |      |       |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 9:15                                                 | 0:15 | 9:30  | <b>Talk 29</b>                         | Genomics and genetic analysis of <i>Cornus florida</i> (flowering dogwood) resistance to powdery mildew fungus, <i>Erysiphe pulchra</i> . Pavlovic <sup>1</sup> , Zaklina <sup>1</sup> ; *Nowicki <sup>2</sup> , Marcin <sup>2</sup> ; Boggess <sup>3</sup> , Sarah L. <sup>3</sup> ; Yadav <sup>4</sup> , Lav K. <sup>4</sup> ; Staton <sup>5</sup> , Margaret E. <sup>5</sup> ; Hadziabdic <sup>6</sup> , Denita; Wadl <sup>7</sup> , Phillip A. <sup>7</sup> ; Xiang <sup>8</sup> , Qiu-Yun <sup>8</sup> ; Pais <sup>9</sup> , Andrew L. <sup>9</sup> ; Trigliano <sup>10</sup> , Robert N. <sup>10</sup> |
| 9:30                                                 | 0:15 | 9:45  | <b>Talk 30</b>                         | Genec copy number variation in defence against spruce budworm in <i>Picea</i> spp.. Parent, Geneviève G. (1), Giguère, Isabelle (2); Hung, Tin Hang (3); Wu, Ernest Ting Yu (3); Mackay*, John J. (3)                                                                                                                                                                                                                                                                                                                                                                                                        |
| 9:45                                                 | 0:15 | 10:00 | <b>Talk 31</b>                         | Healing rate as a tolerance trait to insect damage in provenances of Norway Spruce. Raul de la Mata <sup>1,2</sup> , Axel Hjelm <sup>3</sup> , Rafael Zas <sup>1</sup> , Luis Sampedro <sup>1</sup> , Adriana Puentes <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                           |
| 10:00                                                | 0:20 | 10:20 | Discussion                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 10:20                                                | 0:30 | 10:50 | <i>Coffee Break and posters</i>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>SESSION 10</b> (15min. Talks + 20 min Discussion) |      |       |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Moderator: Carmen Romeralo</b>                    |      |       |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 10:50                                                | 0:15 | 11:05 | <b>Talk 32</b>                         | Screening for potential nematocidal activity of fungus from different species to control pine wilt disease.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 11:05                                                | 0:15 | 11:20 | <b>Talk 33</b>                         | The fungal microbiome is shaped by the presence of <i>Phytophthora</i> species in mature oak trees. Romeralo, Carmen; Witzell Johanna                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|       |      |       |                                                                                              |                                                                                                                                                                                                                             |
|-------|------|-------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:20 | 0:15 | 11:35 | <b>Talk 34</b>                                                                               | Interaction between <i>Melampsora pinitorqua</i> and <i>Diplodia sapinea</i> in Scots pine. Stein Åslund, Matilda; Stenlid, Jan; Reichelt, Michael; Gershenzon, Jonathan; Elfstrand, Malin.                                 |
| 11:35 | 0:20 | 11:55 | Discussion                                                                                   |                                                                                                                                                                                                                             |
|       |      |       | <b>SESSION 11</b> - Topics on debate (1 or more)<br>Moderator: Luis Sampedro                 |                                                                                                                                                                                                                             |
| 11:55 | 1:00 | 12:55 | Challengues and limitations when studying genetic variation in defences                      |                                                                                                                                                                                                                             |
| 13:00 | 1:45 | 14:45 | <i>Stand-up Lunch at the Casino</i>                                                          |                                                                                                                                                                                                                             |
|       |      |       | <b>SESSION 12</b> (15min. Talks + 20 min Disscussion)<br><b>Moderator: Denita Hadziabdic</b> |                                                                                                                                                                                                                             |
| 14:45 | 0:15 | 15:00 | <b>Talk 35</b>                                                                               | Screening for potential nematocidal activity of fungus from different species to control pine wilt disease. Lucía Villar, Paula Zamora, María Menéndez-Gutiérrez, Jorge Martín, Tamara Sánchez, Esteban Torres, Raquel Díaz |
| 15:00 | 0:15 | 15:15 | <b>Talk 36</b>                                                                               | Twig mycobiomes of European ash ( <i>Fraxinus excelsior</i> ) is shaped by environment factors. Feng Long; Chatchai Kosawang;James Doonan; Erik Dahl Kjær; Lene Rostgaard Nielsen                                           |
| 15:15 | 0:15 | 15:30 | <b>Talk 37</b>                                                                               | Study of western white pine for genetic resistance against blister rust using in vitro technology. Noshad, David * ; Ukrainetz, Nicholas; King, John; and Yanchuk, Alvin                                                    |
| 15:30 | 0:20 | 15:50 | Discussion                                                                                   |                                                                                                                                                                                                                             |
|       |      |       | <b>SESSION 13</b> (15min. Talks + 20 min Disscussion)<br>Moderator:                          |                                                                                                                                                                                                                             |
| 16:00 | 0:15 | 16:15 | <b>Talk 38</b>                                                                               | to be allotted                                                                                                                                                                                                              |
| 16:15 | 0:15 | 16:30 | <b>Talk 39</b>                                                                               | to be allotted                                                                                                                                                                                                              |
| 16:30 | 0:15 | 16:45 | <b>Talk 40</b>                                                                               | to be allotted                                                                                                                                                                                                              |
| 16:45 | 0:20 | 17:05 | Discussion                                                                                   |                                                                                                                                                                                                                             |
| 19:30 |      |       | Board buses, depart for Social Dinner                                                        |                                                                                                                                                                                                                             |
| 20:00 |      | 23:55 | Social Dinner at "Camiño da Serpe" Restaurant                                                |                                                                                                                                                                                                                             |

#### Day 5: Friday September 17, 2022

|                               |      |       |                                                                     |
|-------------------------------|------|-------|---------------------------------------------------------------------|
| 9:15                          | 0:10 | 9:25  | Good morning & Logistics                                            |
| SESSION 11 - Topics on debate |      |       |                                                                     |
| 9:25                          | 1:00 | 10:25 | Nadir Erbilgin - General overview and main take home messages + q/a |
| 10:30                         | 0:30 | 11:00 | Coffee Break                                                        |



|       |      |       |                                                                     |
|-------|------|-------|---------------------------------------------------------------------|
| 11:00 | 1:00 | 12:00 | Michael Cleary - General overview and main take home messages + q/a |
| 12:00 | 0:45 | 12:45 | Luis Sampedro - Future of the working group and next steps          |
| 12:45 |      |       | Goodbye                                                             |
| 13:00 |      | 14:30 | <i>Stand-up Lunch at the Casino</i>                                 |



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