

Copenhagen, Denmark | October 5 - 6, 2017

## Venue

Technical University of Denmark, Building 101, Meeting Room 1  
Anker Engelundsvej 1, DK-2800 Kongens Lyngby, Denmark.

## Welcome to iPhloem 2017

Each presentation is limited to 15 minutes with 5 additional minutes for discussion and transition to the next speaker. A 10-minute introduction to the field is given at the beginning of each session by the first speaker.

Introduction

10 min

Presentation

15 min

Questions + transition

5 min

first talk of each session

## Thursday, October 5

08:30 – 10:15 Registration, Coffee & Breakfast

### Workshop opening session

10:15 – 10:30 Welcome *Kaare H. Jensen*

10:30 – 11:00 Münch, morphology and microfluidics: our problem with the phloem *Michael Knoblauch*

### Phloem loading and source-sink relations

11:00 – 11:30 Introduction to Phloem loading and source-sink relations &  
Not All Phloem Cells are the Same *Robert Turgeon*

11:30 – 11:50 Source-sink relations *Uwe Sonnewald*

11:50 – 12:10 The relationship between water potential and phloem loading in *Quercus rubra* *Jessica Gersony*

12:10 – 12:30 Leaf phloem architecture hints at implications for flow dynamics of sugar export  
*Monica R. Carvalho*

12:30 – 14:00 **Lunch at DTU**

### Phloem flow and vascular architecture

14:00 – 14:30 Introduction to Phloem flow and vascular architecture & Maintaining phloem transport as you grow taller through changes in source pressure and scaling of sieve tube geometry *Jessica Savage*

14:30 – 14:50 On the size of conifer needles *Tomas Bohr*

14:50 – 15:10 Phloem conductance at stand level: scaling anatomical data *Daniel Epron*

15:10 – 15:30 The pre-phloem pathway: cell coupling monitored with fluorescence loss in photobleaching *Helle J. Martens*

15:30 – 15:50 Efficiency and regulation of phloem transport in trees *Johannes Liesche*

15:50 – 16:30 **Coffee break**

### Physics of flow and transport in plants

16:30 – 17:00 Fundamentals of low-Reynolds-number hydrodynamics, with applications to biological flow problems  
*Howard A. Stone*

17:00 – 17:20 Phloem transport with Semipermeable conduit walls *Sanna Sevanto*

17:20 – 17:40 Pressure-regulated flow in plasmodesmata nanopores *Keunhwan Park*

17:40 – 18:00 Incorporating phloem transport into developmental root models *Kirsten Ten Tusscher*

18:00 – 18:20 A universal poroelastic mechanism for hydraulic signals *Jean-Francois Louf*

18:30 – 20:30 **Dinner at DTU**

20:30 – 21:00 Plant Engineering Education *Daniel Attinger*

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## Friday, October 6

### Phloem development and molecular biology

- 09:00 – 09:30 Introduction to Phloem development and molecular biology & Towards understanding phloem morphogenesis and function *Yka Helariutta*  
09:30 – 09:50 Exporters – the missing link in long-distance transport of amino acids *Ulrich Hammes*  
09:50 – 10:10 Tackling companion cell identity *Sofia Otero*  
10:10 – 10:30 A molecular rheostat adjusts auxin flux to promote root protophloem differentiation *Christian Hardtke*  
10:30 – 11:00 **Coffee break**

### Functional Phloem Imaging

- 11:00 – 11:30 Introduction to Functional Phloem Imaging & What is required for sieve elements to stay functional? *Alexander Schulz*  
11:30 – 11:50 Fluorescent phloem-mobile xenobiotics: Probing old paradigms with new tools *Kirsten Knox*  
11:50 – 12:10 Transport of glucosinolates from site of synthesis to site of storage *Pascal Hunziker*  
12:10 – 14:00 **Lunch at DTU**

### Stress Response

- 14:00 – 14:30 Introduction to Stress Response & Vascular signalling routes for wound-stimulated jasmonate synthesis *Edward Elliston Farmer*  
14:30 – 14:50 Citrus huanglongbing: a disease of carbohydrate translocation *Christopher Vincent*  
14:50 – 15:10 On the verge of a hot, juicy dinner: A heat-inducible phloem protein that compromises aphid feeding *Karen Kloth*  
15:10 – 15:30 Phosphosite charge rather than shootward localization determines OCTOPUS activity in root protophloem *Moritz Graeff*  
15:30 – 16:00 **Coffee break**

### The Future of Phloem Research

- 16:00 – 16:30 The future of phloem research at the interface between biology and physics *N. Michele Holbrook*  
16:30 Closing remarks *Kaare H. Jensen*

### Organizing committee:

- Kaare H. Jensen (Technical University of Denmark)  
Michael Knoblauch (Washington State University)  
N. Michele Holbrook (Harvard University)

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