

# A Win-win Educational Platform in Forestry

Case study: Undergraduate transfer programs between Beijing Forestry University (**BFU**) and University of British Columbia (**UBC**)

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# BFU:

## What's the big idea?

- Introduce high-quality educational resources and methods
- Improve faculty member's teaching and research capacity or skills
- Provide opportunity for students to learn from foreign professors at BFU
- Enhance faculty exchanges and research cooperation
- Promote BFU's internationalization

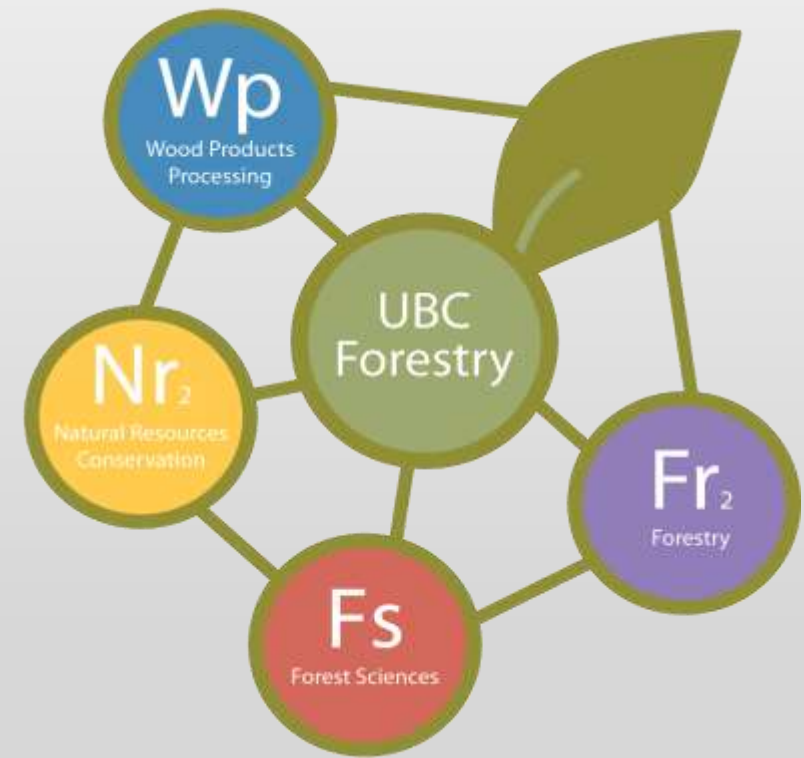
# UBC:

## What's the big idea?

- Share high-quality educational resources and methods
- Cultivate qualified research and management personnel in forestry sector with bilingual skills
- Enhance faculty exchange and research cooperation
- Promote capacity building in forestry education
- Provide opportunity to develop more diverse educational programs

# Cooperation model

- The program started from 2011
- 3+2" refers to the number of years of post-secondary education in BFU followed by the years to program completion at UBC.
- The transfer programs cover Forest Sciences and Wood Products Processing.
- over 200 students are currently enrolled in two cooperative programs.



# Cooperation model

- UBC send around 4 professors to BFU to teach the courses each year
- During the UBC professor's stay at BFU, one BFU faculty member is working with him or her
- Beside the lectures, UBC professor gives academic reports about his/her research or hot topics in his/her study field
- UBC professors discuss and exchange the ideals about teaching and research problems with BFU professors

# Challenges and Strategies at BFU

## **Program management is the big challenge at BFU.**

- How to attract the best new students to study in the program (lack of hands-on experience and motivation in studying forestry)
- How to arrange the courses given by UBC
- How to help the students to meet the English requirements by UBC

## **Student's struggles**

- How to make the students adapting UBC education system (cultural, languages, academic writing and etc)

# Actions

- **Giving special attention to the program for attracting new students**  
program information design, propaganda to enroll new students at high schools
- **Meet new students by UBC program personnel at BFU each year**  
help students understand the program and let other young people know about the program
- **Academic support**  
working closely with UBC faculty members teaching courses at BFU; lecturing via video-conferencing system; English training courses
- **Get familiar with UBC education system**  
visit UBC (BUF faculty members, staff members working in admission office, academic affairs office, international relation office, department office management personnel and etc. )
- **Student network information exchanges**  
students at UBC with the students at BFU
- **Working more closely with UBC**  
Courses teaching, UBC information, student's study situation at UBC and etc

# Student monitoring and cooperative Strategies at UBC

Two years pilot studies before the formal agreement has been signed

Articulation agreement and transfer credits (different curriculum and program setting)

Challenges from students:

- Normally need to have three months to go through the critical transition, and three to six months to adapt themselves
- Differences of cultural, languages and educational systems
- Academic writing ability, particular in citation
- Hands-on experience and motivation in studying forestry

# Actions

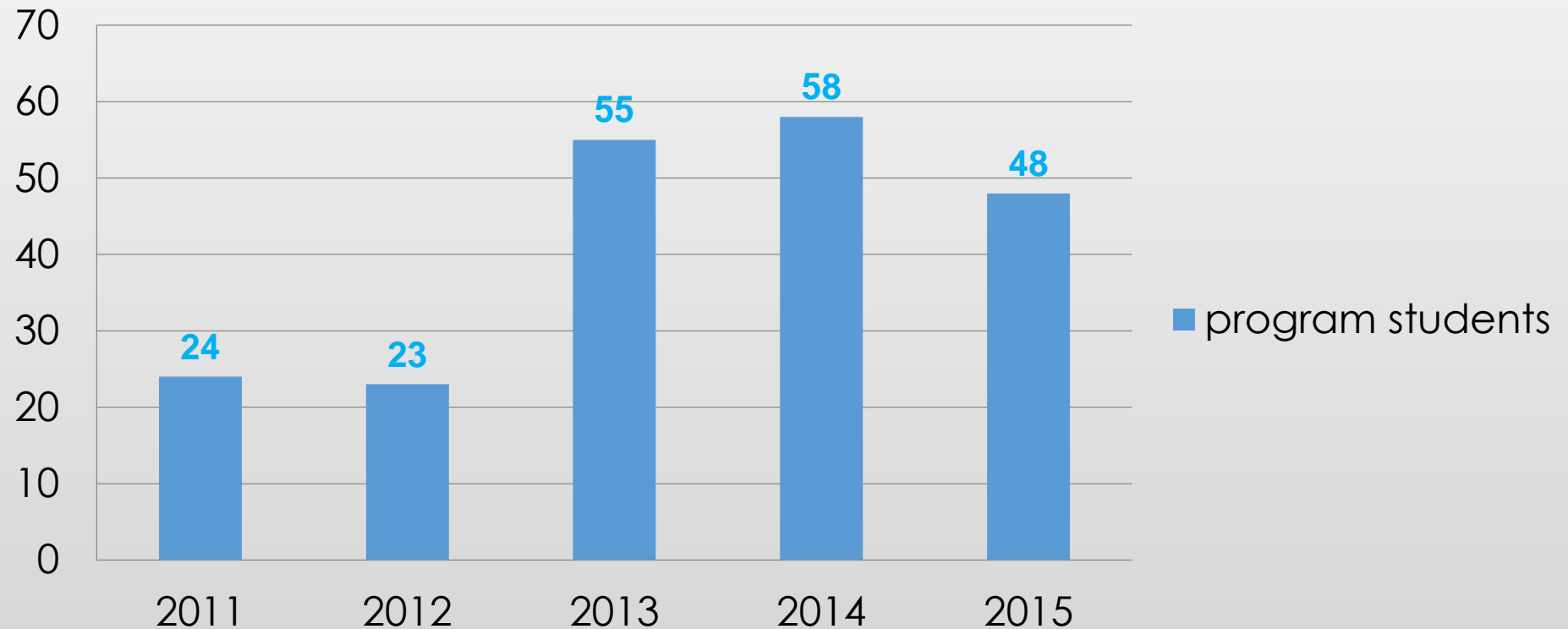
- **Working closely between two Universities**  
curriculum design, transfer credits, teaching arrangements
- **Meet new students in person**  
help students understand the work ahead to meet UBC's entrance requirements and to provide Q&As for students and parents
- **Academic support**  
faculty members taught courses in China; lecturing via video-conferencing system; English training courses
- **Transitioning programs**  
Forestry Summer Orientation, UBC JumpStart, LPI workshop, Academic English Support (AES) program
- **Hands-on learning/working experiences**  
volunteering + Co-op program
- **Social events**  
help students to be more connected to faculty and peers
- **Scholarships and Awards**

# Share high-quality educational resources



<p><b>Introduction</b></p> <p>View this module first to get an overall picture of this resource</p>	<p><b>Bioenergy and Biofuels</b></p> <p>Discover the steps in producing biofuel from wood</p>	<p><b>Business Fundamentals</b></p> <p>Investigate about business strategies in the forest products industry</p>	<p><b>Climate Change and Visualization</b></p> <p>See how different systems react to forest future landscapes</p>
<p><b>Conservation Science</b></p> <p>Investigate the protection of species and conserving its life</p>	<p><b>Developing Markets for Wood Products</b></p> <p>See how wood products from British Columbia can reach markets in China</p>	<p><b>Engineered Wood Products</b></p> <p>Discover how wood can be engineered to produce new products</p>	<p><b>Forest Ecology</b></p> <p>Learn about the relationships between flora, fauna and abiotic matter in forests</p>
<p><b>Forest Entomology</b></p> <p>Learn about the various groups of insects that bug forests</p>	<p><b>Forest Genetics</b></p> <p>Learn about how trees are bred for improvement</p>	<p><b>Forest Management</b></p> <p>See how a large range of sampling scenarios are needed in forest management</p>	<p><b>Forest Measurements and Biometrics</b></p> <p>Find out about the gathering of forest data through the reporting of land information</p>
<p><b>Forest Pathology</b></p> <p>Explore the world of forest diseases</p>	<p><b>Forest Stand Dynamics and Modeling</b></p> <p>Investigate how forests grow and change over time</p>	<p><b>Geographic Information Systems</b></p> <p>Discover the many applications of GIS in forestry and resource management</p>	<p><b>Global Issues</b></p> <p>Take a look at forests from a global perspective</p>
<p><b>Global Wood Trade</b></p> <p>Find out about alternatives of global trade flow for wood products</p>	<p><b>Remote Sensing</b></p> <p>See how information from satellites can help us manage the forest</p>	<p><b>Supply Chain Management</b></p> <p>Explore the flow of goods and services in the forest products industry</p>	<p><b>Sustainability and Forestry</b></p> <p>Learn about ways in which forests can be managed more sustainably</p>

# Number of students in the program

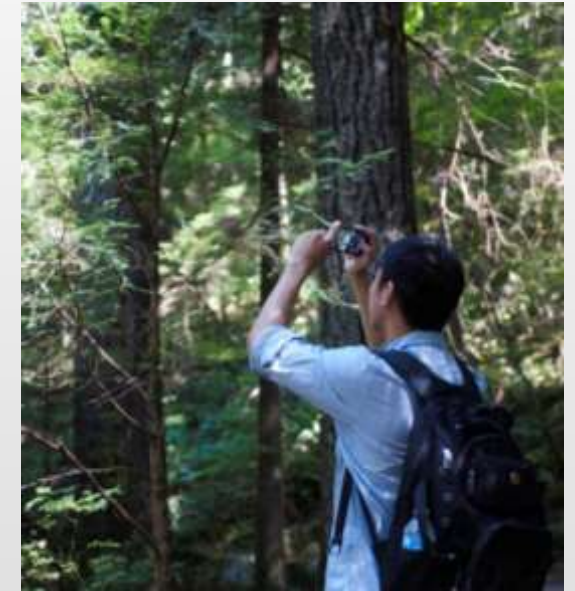


Ever since 2011, more than 200 BFU students have been recruited to the joint program in the majors of Forest Sciences and Wood Products Processing.

# PARTNERSHIP LEAD TO GOOD FRIENDSHIP



# Support for students



# Excellent Graduates

**52** students have successfully completed their degrees, **1/3** of them are pursuing their Master's degree while the majority of the remaining are employed in China or Canada

## **Employers:**

- University of British Columbia
- Canadian Forest Products Ltd. (Canfor)
- Industrial Forestry Service
- Comact
- West Fraser
- Interfor
- Surrey Cedar Ltd.
- Tolko Industries
- Tenryu Canada Corporation
- Paper Excellence Group
- BC Timber Sales
- Chinese Academy for Environmental Planning
- ...



**Ye Huang, RPF (AB&BC)**

Woodlands Information Management Analyst at Canfor



**Kunqian Zhang, M.Sc Student**

UBC Research Assistant, Paper & Forest Products

# Faculty exchange & research cooperation

- The cooperative educational platform fully embodies the principle of keeping teacher-level cooperation as priority
- Exchange teaching and learning experience
- Research cooperation
- Co-authorship for research papers
- Instructors for the transfer programs and short-term exchange programs





## A transcriptomics investigation into pine reproductive organ development

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**Key words:** bisexual cones, developmental regulators, gymnosperms, hermaphroditism, *Pinus tabulaeformis*, reproductive structures, transcriptome.

### Summary

- The development of reproductive structures in gymnosperms is still poorly studied because of a lack of genomic information and useful genetic tools. The hermaphroditic reproductive structure derived from unisexual gymnosperms is an even less studied aspect of seed plant evolution.
- To extend our understanding of the molecular mechanism of hermaphroditism and the determination of sexual identity of conifer reproductive structures in general, unisexual and bisexual cones from *Pinus tabulaeformis* were profiled for gene expression using 60K microarrays. Expression patterns of genes during progression of sexual cone development were analysed using RNA-seq.
- The results showed that, overall, the transcriptomes of male structures in bisexual cones were more similar to those of female cones. However, the expression of several *MADS-box* genes in the bisexual cones was similar to that of male cones at the more juvenile developmental stage, while despite these expression shifts, male structures of bisexual cones and normal male cones were histologically indistinguishable and cone development was continuous.
- This study represents a starting point for in-depth analysis of the molecular regulation of cone development and also the origin of hermaphroditism in pine.

Co-authorship for  
research papers

# More diverse educational programs

short-term summer exchange (4-6 weeks)



BEIJING FORESTRY UNIVERSITY

**BFU**  
**SUMMER**  
**SCHOOL**  
**2015**

A chance of  
close contact  
with wildlife

Learn about China  
Step into Wildlife

Beijing Forestry University, China  
May 18 - June 7, 2015  
Tel. +86 10 62338095/62338271  
summerschool.bjfu.edu.cn  
summerschool@bjfu.edu.cn

**Exploring  
forestry and  
conservation  
in China**

A summer study  
program

This group-study program is a four-week intensive program offered through the UBC Faculty of Forestry in partnership with Nanjing Forestry University. It provides opportunities for a better understanding of both local and global forestry issues in China through activities, including in-class lectures, field trips to nature reserves, and visits to local plantations and industrial facilities.

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**UBC Forestry**

Since 2012, over **200** students have participated in one of the short-term exchange programs, which provide mobile and outdoor classrooms in the Asia-Pacific region.

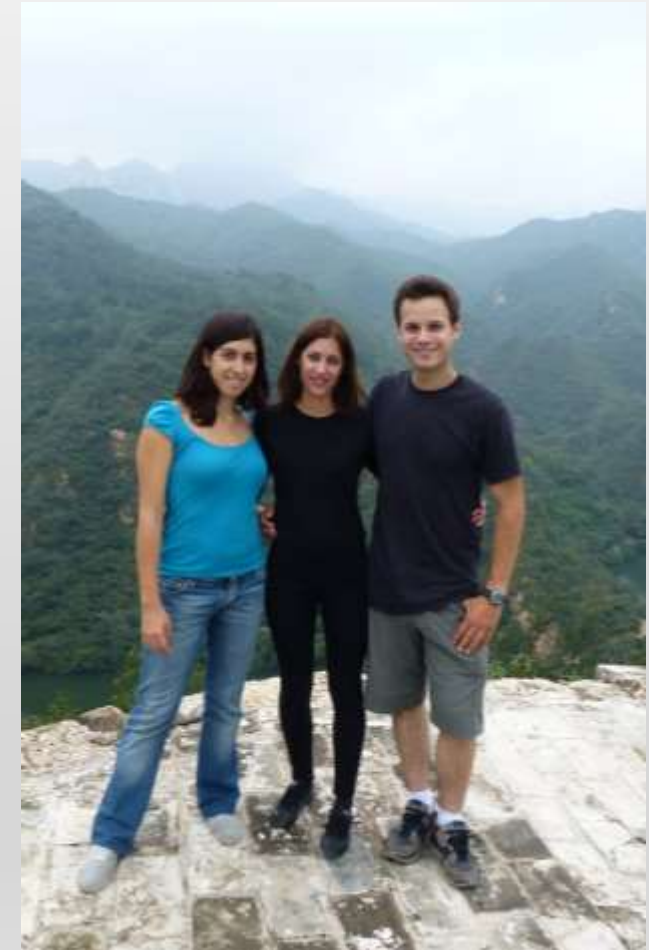
# More diverse educational programs

short-term summer exchange (4-6 weeks)



# More diverse educational programs

Long-term exchange (6-10 months)



# Cooperation Opportunities at BFU

Double degree programs

Scholarship program

Summer program or long-term exchange programs

The programs ( forest ,environment, natural reserve and protect, wood science, biology, economics, management, industry science and etc)

## **at BFU:**

- 57 bachelor programs
- 116 Master degree programs
- 39 Ph.d programs
- 6 post-doctor programs

# Cooperation Opportunities from UBC

- Undergraduate transfer programs
- Summer program or long-term exchange programs
- Professional master programs:
  - Master of Sustainable Forest Management
  - Master of Geomatics for Environmental Management
  - Master of International Forestry

# Key Messages

- Unique win-win educational models
- Excellent programs for cultivating global citizens with promoting global awareness, meaningful engagement, and cross-cultural understanding
- Home for cultivating personnel who are proficient in both Chinese and English languages, and familiar with forestry, conservation, and wood technology in both regional and global contexts
- Enhance cooperation in faculty exchanges and research cooperation
- Hope this kind of joint educational model can be applied within more universities in Asia-Pacific region

THANKS FOR YOUR ATTENTION!

**Broader and brighter international cooperation**

