

16th September 2009,
ESS– Oklahoma City, OK

Agricultural Technology Transfer and licensing – Implementation

Keith J. Jones PhD

Executive Director, Office of Intellectual Property
Administration / WSU Research Foundation

Agricultural research – historically a public good
Genetic Improvement – specialty crops

Grapes

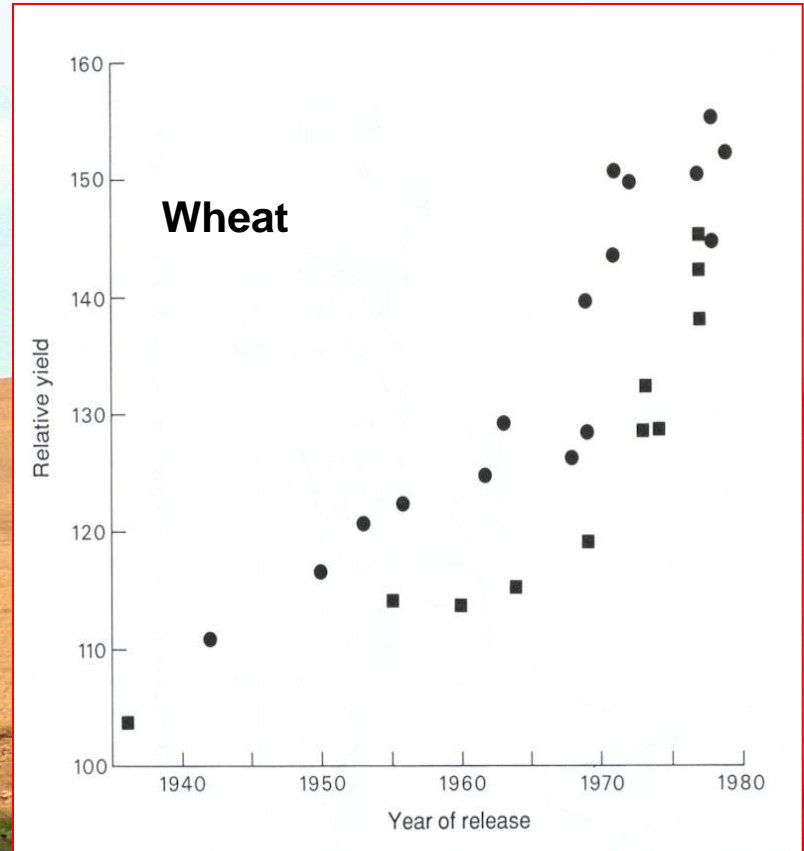
Onions

Lentils

Apples

Raspberries

Strawberries

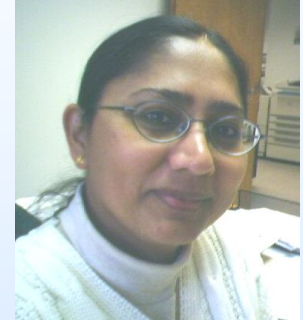


WSURF

- **WSURF – a 501(c)(3) corporation with separate board**
- **Board consisting of Community, Alumni and Ex-Officio WSU representatives.**
- **Manages the technology**
 - **Traditional License**
 - **License to Start-up**
 - **Gap Funding**
- **Manages the Research and Technology Park**

Staff

Executive Director – Keith Jones PhD
Assistant Director - Sita Pappu PhD
Commercialization Managers –



Brian Kraft

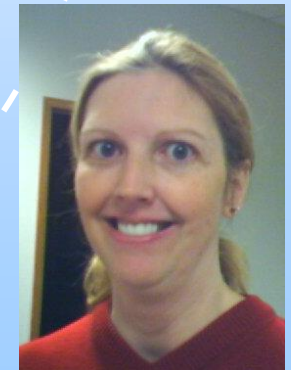


Tom Kelly MBA

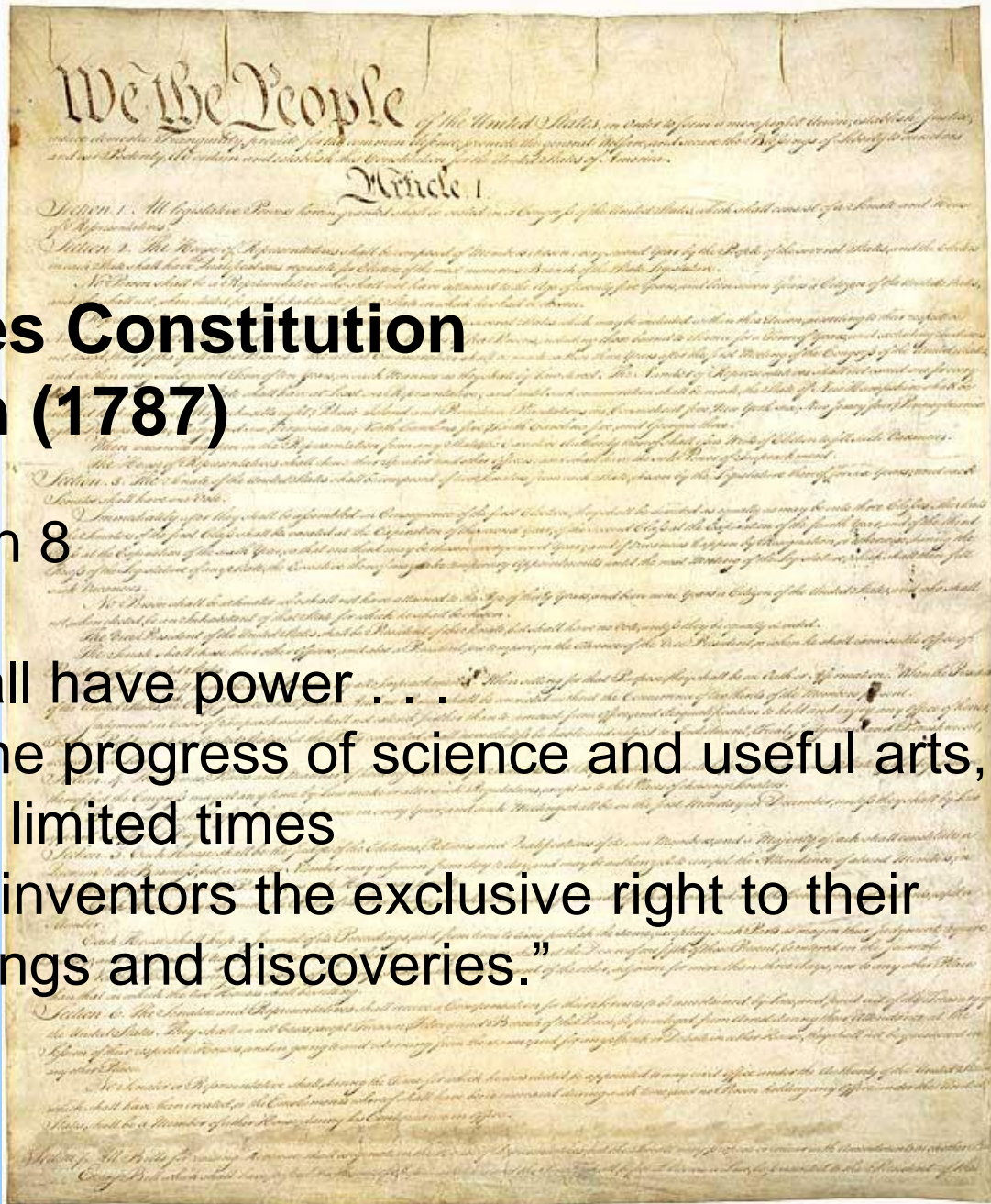
Travis Woodland JD



Graduate Student – Jane Payumo



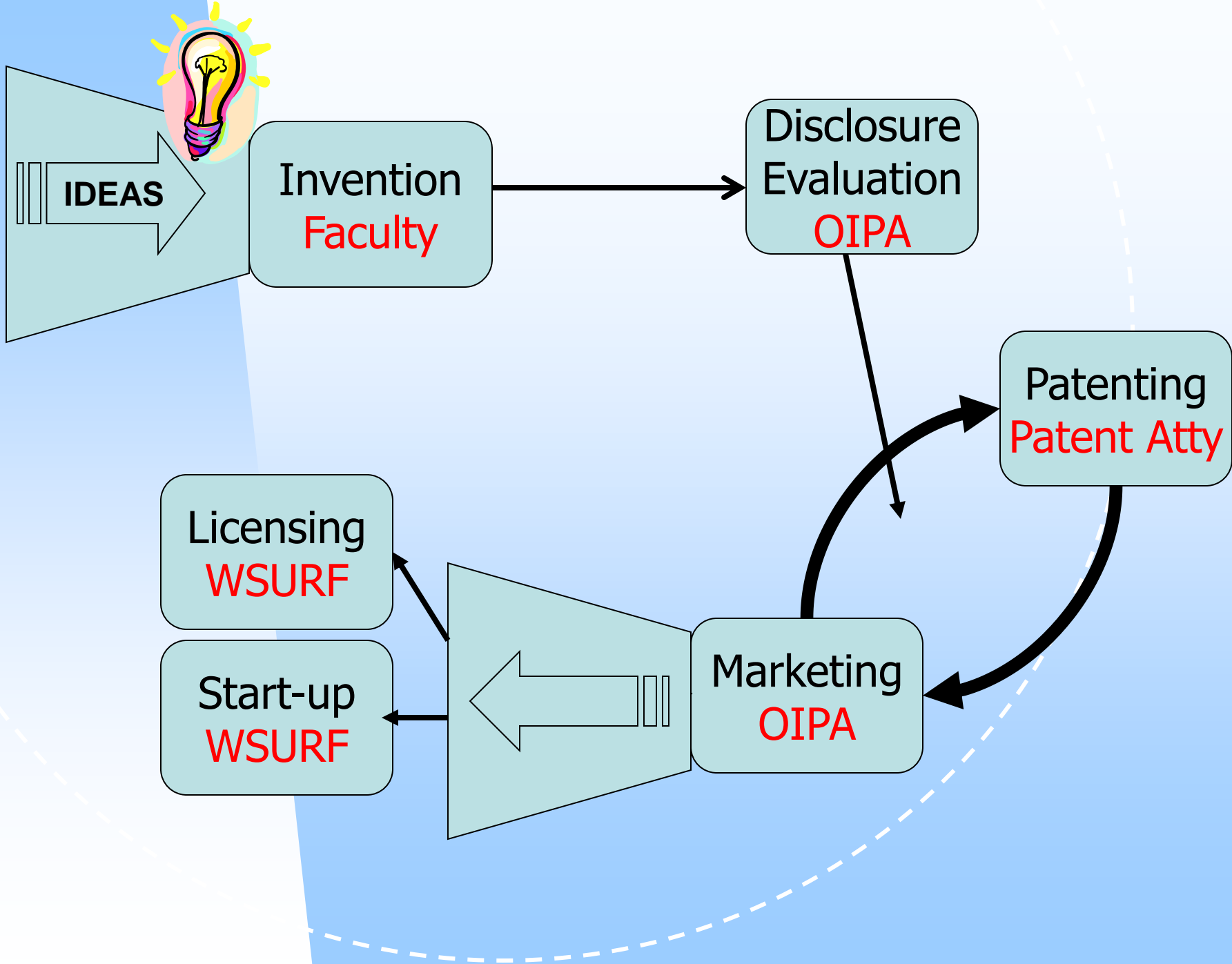
- **Program Administrative Manager – Mary Frei MBA**
- **Accountant - Heather Yockey**



United States Constitution Constitution (1787)

Article I, section 8

“Congress shall have power . . .
...to promote the progress of science and useful arts,
by securing for limited times
to authors and inventors the exclusive right to their
respective writings and discoveries.”



• Potatoes

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Contracts &
Agreements

Getting Started

Board Members

Potato Variety Management Institute

In 2005 the state potato commissions of Washington, Oregon, and Idaho launched a new nonprofit 501(c)(3) corporation called the Potato Variety Management Institute (PVMI) to handle the licensing and royalty collection on Tri-State potato varieties. It was developed as a grower-controlled alternative to the universities' efforts to manage varieties and interact with industry in royalty collection. PVMI hopes to provide the following main benefits to the industry:

- Exert grower control over varieties developed through grower supported research
- Work with end-users to increase adoption of new varieties in processing, grocery, and restaurant trades
- Use market research to focus variety development goals
- Manage distribution and use of varieties around the world
- Return royalties directly to Tri-State potato research programs

PVMI is governed by a nine-member Board of Directors and an Executive Committee.

Mission



Raspberry

Cascade Delight

Mid Season, Very Large, Firm Berries

Parentage

Cascade Delight was produced from a cross of Chilliwack and WSU 994 made in 1989 at the Washington State University (WSU) Puyallup Research and Extension Center. The original seedling was selected in 1992 by Dr Pat Moore and evaluated as WSU 1090.

Season

In trials in the Pacific Northwest (PNW) of the USA the midpoint of harvest for Cascade Delight is similar to Meeker and Tulameen, but the length of the harvest season is slightly shorter.

Plant Characteristics

Cascade Delight is very vigorous with long fruiting laterals and produces an adequate number of canes, similar to Meeker. Although the basal portions of young canes (less than 30 cm tall) have 20-40 spines per cm of cane, the upper portions of taller canes (over 1 m in height) have much smaller and fewer spines (<5 spines per cm).



Raspberry - UK



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INTRODUCTION

MEIOSIS, established in 1989 in the name of NSA Plants, was the brainchild of major soft fruit and tree fruit propagators together with leading soft fruit marketing groups in the UK. Designed to work closely with fruit breeding programmes throughout the world, MEIOSIS task was then, and is now to introduce new cultivars to the Soft Fruit Industry. Through the strength of our portfolio, we are able to protect new material against unlicensed propagation, and provide growers with new and potentially improved varieties for early trials.

As a Company focussed on the commercial exploitation of new soft fruit cultivars, MEIOSIS undivided attention is given to ensuring the best efforts of the Breeders/Owners are made available to commerce, with the ensuing rewards success brings.

MEIOSIS have Variety Development Agreements in place with many overseas Soft fruit Breeding Programs, and provide a free service for the commercial introduction of new cultivars from those programs.

Registered Address: Meiosis Ltd, Bradbourne House, Stable Block, East Malling, Kent, ME19 6DZ
Company Registration number 2330975 VAT number 514 0055 01
Registered in England and Wales

Raspberry – North-West US



Certified strawberry and caneberry plant nursery, small fruit production, processing, fresh market, and sales.

Sakuma Brothers is a family business spanning four generations with over 85 years experience in the small fruit industry. We can provide a total package to you - something that no other company in the small fruit industry can match.

phone: **360.757.6611** email: info@sakumabros.com

[Employment](#)

[Staff Login](#)



Sakuma Brothers Farms **360.757.6611**

From the heart of Skagit Valley in Burlington, Washington, we are 100% vertically integrated in the small fruit industry. We grow conventional and organic:

- **Strawberries**
- **Blueberries**
- **Raspberries**
- **Apples**
- **Tea**

We provide:



Norcal Nursery **530.527.6200**

Headquartered in Red Bluff, California. We produce over two hundred million strawberry plants annually for domestic and international sales. In addition, we provide:

- Nursery plants that produce quality fruit with competitive yields
- Certified raspberry and tissue cultured caneberry plants.
- 50 years of experience
- [Commercial Sales](#)
- [Online Store](#)



Sakuma Brothers Processing **360.757.3822**

Located in Burlington, Washington, we process:

- Strawberries
- Raspberries
- Blueberries
- Blackberries
- Other fruits

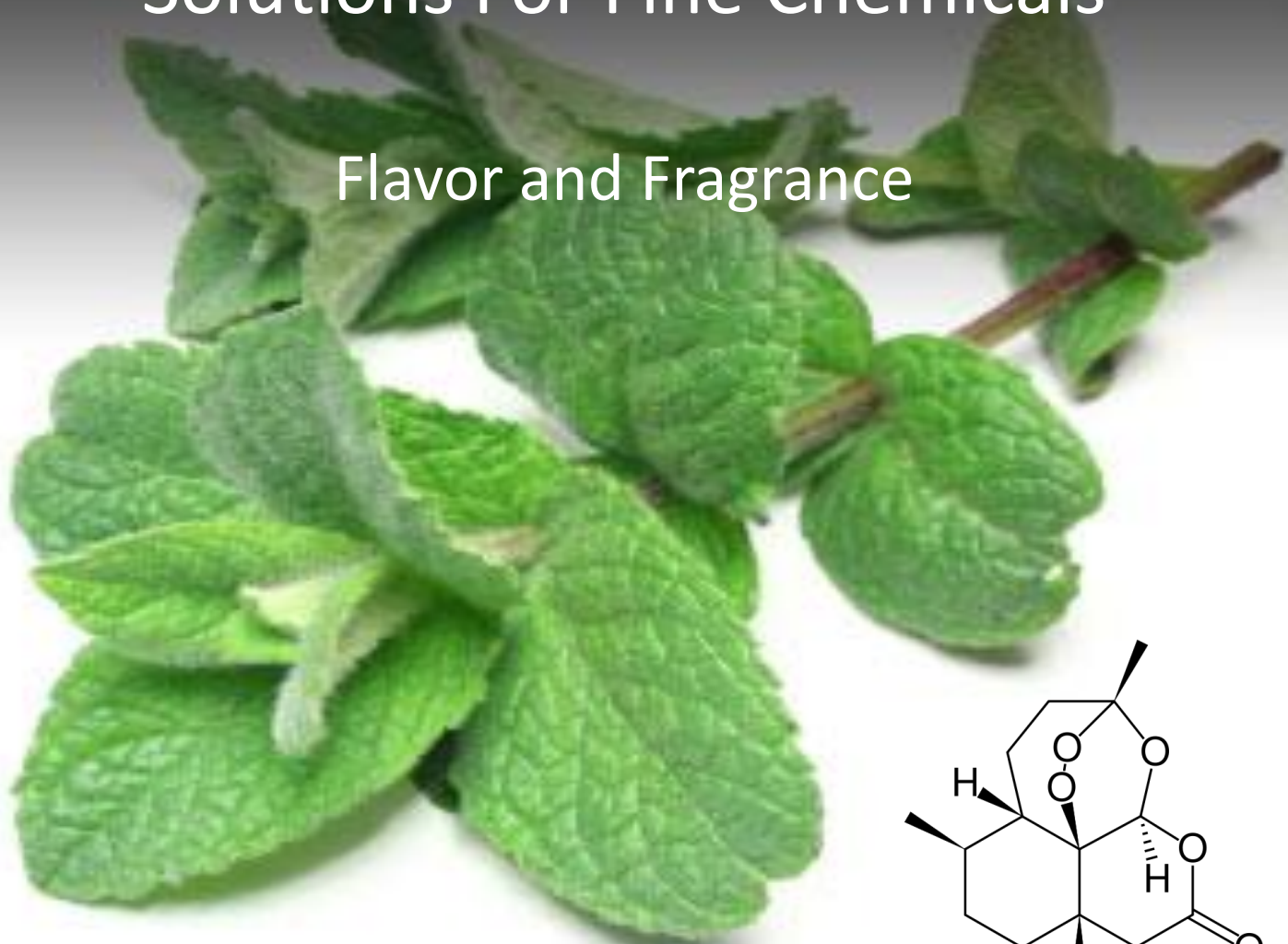
We provide retail, food service, and industrial fruit ingredients to the most demanding markets in the US and abroad.

AIB Superior Rating
Approved Kosher



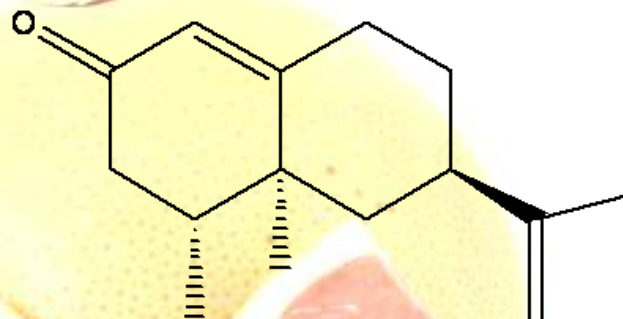
Solutions For Fine Chemicals

Flavor and Fragrance



The Problem – Shortage of Affordable Aroma Chemicals

**Example: Nootkatone
(grapefruit flavor)**



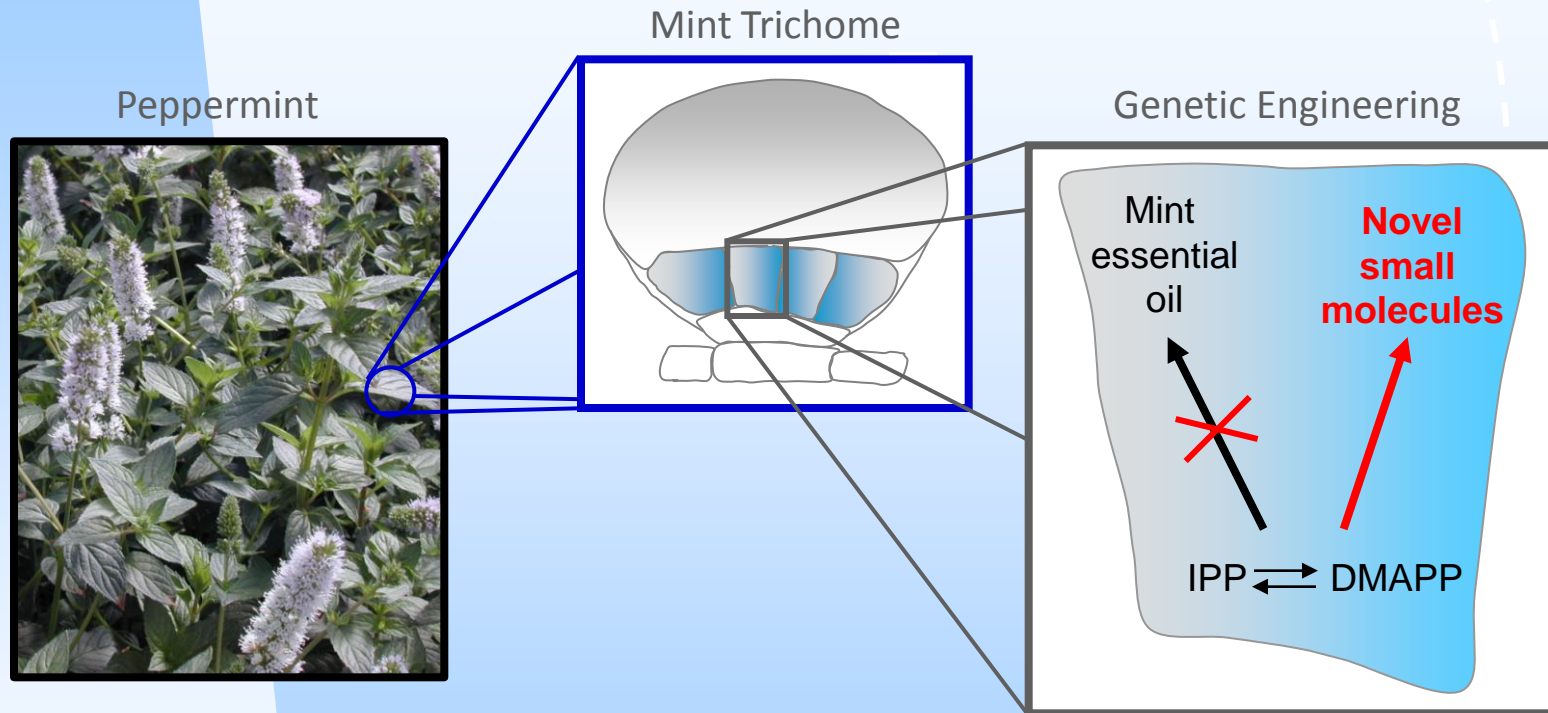
Extracted from natural source

Shortage of raw material

Low volume / high cost

\$ 4,000 – 10,000 per kg

The Technology – Mint Trichome Engineering



- Synthesis in specialized cells.
- Strong IP position.
 - Patents (composition of matter, genes, enzymes, methods).
 - Know-how (transformation, genetic engineering)

Animal Disease Diagnostics

School for Global Animal Health



[Emerging Disease Detection](#)

A mission to prevent disease and enrich lives

The School for Global Animal Health provides innovative solutions to global infectious disease challenges through research, education, global outreach, and application of disease control at the animal-human interface. It advances science, people, and policy to discover novel approaches for disease intervention and delivery of preventive health care for animals and humans.

College of Veterinary Medicine

Washington Animal Disease Diagnostic Lab

Search WADDL

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Washington Animal Disease Diagnostic Laboratory

NAVIGATION: The main sections of the WADDL web site are listed on the navigation menu at your left. Click on a link to visit that section of the WADDL web. The current page is highlighted in **crimson**. Click [Diagnostic Lab](#) to return to this page. Links below the dotted line will take you to another web site within the College of Veterinary Medicine's web site. Use the back arrow on your web browser to return to the WADDL web.

Phone: 509-335-9696 [How to Find Us](#)

Laboratory Accession FORMS

The following forms require [Adobe Acrobat Reader](#). Forms can be completed in your web browser, then printed.

[General WADDL Accession Form](#)
[Accession Form Aquatic Health](#)
[Accession Form Abortion Diagnosis](#)
[Avian Diagnostic Accession Form](#)
[Food Safety Accession Form](#)
[Identification Form for Multiple Animals](#)
[WSU Teaching Hospital Accession Form](#)
[Trichomoniasis Accession Form](#)



Current Announcements

[Contagious Equine Metritis](#) posted Jan 14, 2008

[Diagnosis and official regulatory testing for bovine trichomoniasis in Washington State](#) Jan 2009

[Fact Sheet on Malignant Catarrhal Fever](#)



VMRD, Inc.

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What's New...

- The ***Babesia caballi*** cELISA and the ***Babesia equi*** cELISA are both licensed and in stock.
- **ELISAWare™** plate reading software now available for all VMRD ELISA kits
- **Reference Samples** available for VMRD **EIA AGID and EIA ELISA** kits.
- VMRD's **Spring Newsletter** is now available here!
- **PPV Conjugate** is now available!
- Vesicular Stomatitis Virus (VSV) FITC Conjugates now available



Farm Animal Commercialization – SNP markers for meat quality prediction

- **Technology opportunity**
 - **WSU has a herd of Wagu cross cattle**
 - **Extreme variability in meat quality measures**
 - **“Chip” technology allows very economical packaging of many SNP markers**
- **Market opportunity**
 - **Selling chips to farmer service organizations to improve beef**
- **License**
 - **Exclusive , field of use**
 - **WSURF retained medical use - obesity**

Beef

IGENITY Profile

Feed Efficiency

Carcass Traits

Tenderness

Maternal Traits

Docility

Coat Color

Parentage

Genetic Evaluation

Horned/Polled

BVD-PI

IGENITY Software

Application

Testimonial

Get Started

FAQs

Dairy

IGENITY News

Additional Resources

Events Calendar

Order a Kit

Results

IGENITY[®] for beef

The IGENITY[®] profile
helps you achieve your
goals faster.



The 2005 National Beef Quality Audit (NBQA) provided a new benchmark for the U.S. beef industry. NBQA identified the following 10 goals to help American beef remain the best in the world:

1. Clarify market signals to encourage production of cattle, carcasses and cuts to meet industry targets.
2. Foster communication among industry groups and segments of the beef supply chain.
3. Move expeditiously toward source and age verification to build supply lines of cattle (domestic and export).
4. Minimize production of excess fat.
5. Strive for uniformity/consistency in cattle production.
6. Consider tenderness in genetic and management decisions.
7. Consider tenderness in genetic and management decisions.
8. Recognize the importance of marbling as a value-determining trait.
9. Use instrument assessment of cattle, carcasses and cuts for genetic and management decisions.
10. Select management practices that increase value.

Material Transfer Agreements

- All Material needs to have an MTA attached to it.
- **What is Material?** Clones, cultures, oligos, proteins, varieties, cultivars inbreds. anything you developed!
- Two Kinds:
 - **Out-going (via our office)**
 - Only for research purposes and no commercial use allowed
 - Usually no further transfer allowed
 - Careful how “Modifications” are defined so you protect your invention
 - UBMTA or SMTA (international germplasm)
 - **In-coming (via Office of Grants and Research Development OGRD)**

Research Agreements – Process:

A Company interested in sponsoring research and wants to discuss first---

What to do next?

- Set up a non-disclosure agreement
- Discuss research; Submit Proposal; Grant
- SRA negotiated
- Incoming MTA negotiated
- Conduct research and an Invention results
- Submit Invention Disclosure
- Evaluation then negotiation with Company with outgoing MTA
- Usually relatively quick as there is a Win/Win solution

Work with us! We will guide you through the process

Testing Agreement

- Existing product already on (or close to) market
- Handled by marketing / business development
- Market development
- Very concerned over endangering a significant investment
- Only allow a very defined plan of work
- University researcher often demand that the university agree that 1) no IP will be created, 2) long delay or denial of publication
- Usually very little interest in negotiation

Lessons learned:

- **Technology commercialization:**
 - **is a service to researchers**
 - **is a way to get research results into the hands of those that need them**
 - **is, very rarely, a way to make money**
 - **enhances and enables research collaborations**
 - **is demanded by many scientists (recruitment and retention)**

How the Ag biotech industry looks at the World.

- **Major crops: soy, maize (corn), cotton, canola in the developed world**
- **Minor crops: everything else, everywhere else**

Comparison of Ag to other technologies

Pharmaceutical example:

Cure for Cancer

Start-up

Big Pharma

Market



Comparison of Ag to other technologies

High tech example:

IP Creators
Mostly big
companies (10's)

Start-up

Large / medium High Tech Companies
Cross licensing / standards / pooling / IV



Market

An example Ag Case:

Stem Rust
Resistance in
wheat

Universities (100's)
National Ag Services (100's)
International organizations
Grower groups (100's)
Participatory breeders (potentially
1000's)

Lots of other IP with diverse
owners:
Germplasm (local varieties)
Drought resistance
Heat tolerance
Biotech traits

Multi-national Ag
Regional seed companies
Local seed companies
Seed dealers
Farmers

“Market”

National Partner Initiative

- International “Community of Practice” in IP management for Agricultural Development
- www.cas-ip.org/projects/npi/
- Case studies
- Compendium
- Facilitation skills



Agricultural Technology “Trust”

- **An actively managed licensing / networking hub**
- **Not primarily a match maker**
- **For profit or not-for profit or hybrid**
- **Legal entity to take license and sub license**
- **In biotech – potential formal patent pool**

Thank You

Questions?

Contact Information

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