



WiSys Overview

Challenges

Strategy

Implementation

*Board Of Regents of The University Of Wisconsin System
Business, Finance, and Audit Committee Meeting
September 6, 2007*

Invention disclosures from System campuses ⁽¹⁾

Campus	Disclosures	Patents	Licensed technologies
Eau Claire	12	0	1
Green Bay	3	0	0
La Crosse	10	1	0
Milwaukee	112	10	2
Oshkosh	8	2	0
Parkside	9	0	0
Platteville	12	0	0
River Falls	9	1	0
Stevens Point	15	1	0
Stout	37	1	2
Superior	1	0	0
Whitewater	5	0	0
Total	121 ⁽²⁾/6 yrs	6 ⁽²⁾	3 ⁽²⁾
UW Madison	~350/year	~100	~100

(1) As of July 2007

(2) UWM not included in totals

WiSys Challenge

- Portfolio dominated by low market value technologies
- No pipeline for stable high-value IP

WiSys campuses have significant potential for IP creation

System IP Development Potential

Campus	# Students	# Faculty	Potential Inventors
Eau Claire	10,569	373	66
Green Bay	5,248	155	33
La Crosse	8,809	289	57
Milwaukee	26,769	761	222
Oshkosh	11,070	325	41
Parkside	4,944	120	25
Platteville	6,487	211	30
River Falls	5,990	219	44
Stevens Point	8,642	330	69
Stout	7,895	258	49
Superior	2,826	95	10
Whitewater	10,629	327	11
Total	83,109*	2,702*	435*

* UWM not included in totals

Meeting the Challenge

- Identify areas of expertise/key inventors
- Facilitate long-term R&D to create high-value IP pipeline
 1. Form partnerships to compliment skills
 2. Pool resources to fund quality programs
 3. Improve extramural funding
- Establish partnerships with local businesses/industries

UW Chemical Synthesis Expertise

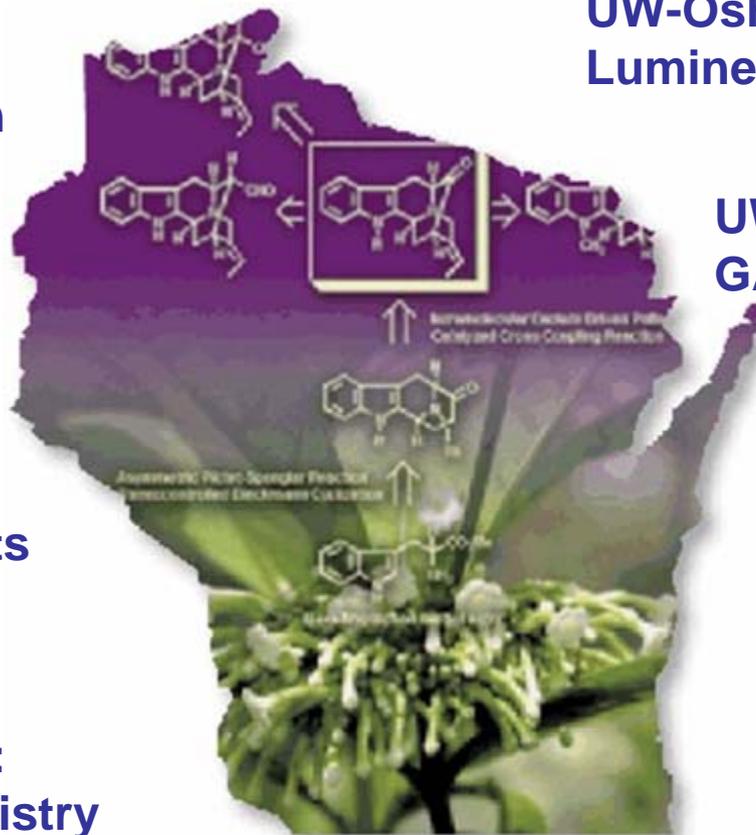
Rational Drug Design: Molecular modeling

**UW-River Falls:
Super capsaicin**

**UW-La Crosse:
Antimicrobials**

**UW-Eau Claire:
Fluorescent agents
Medical imaging**

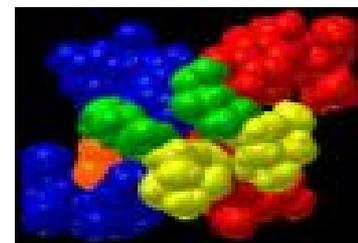
**UW-Platteville:
Polymer chemistry**



**UW-Oshkosh:
Luminescent compounds**

**UW-Green Bay:
GABA binding molecules**

**UW-Milwaukee:
GABA receptor binding
Neurological diseases**



Value Creation

Chemical synthesis expertise to create high-value products

Pharmaceuticals are one of the most profitable and universally beneficial products for the well-being of humans

•Rational drug design capabilities



•Clinical and genomics knowledge



*Marshfield Clinic has clinical and genomics
expertise*

Marshfield Clinic IP Potential

Number of faculty screened	Number of abstracts screened	Number with IP potential	Number with technology expertise	Total IP potential
160	2000	84	30	114

- ***Robust tissue bank collection***
- ***EMR database [clinical database]***
- ***Genomics is a growing field of study***

Research Areas

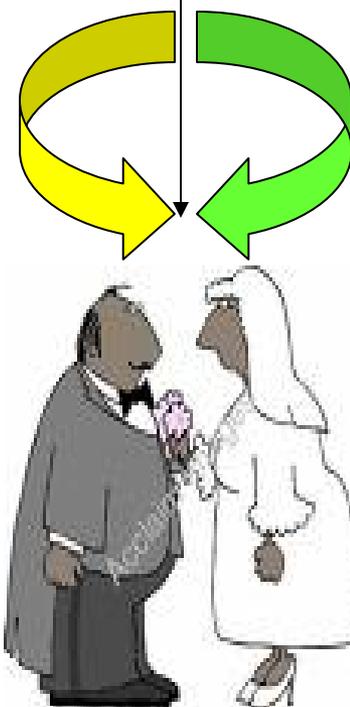
- **Cardiology**
- **Oncology**
- **Genomics**
- **Epidemiology**
- **Animal health**

UW

*Rational drug
design expertise*

Marshfield Clinic

*Clinical, genomics
expertise*



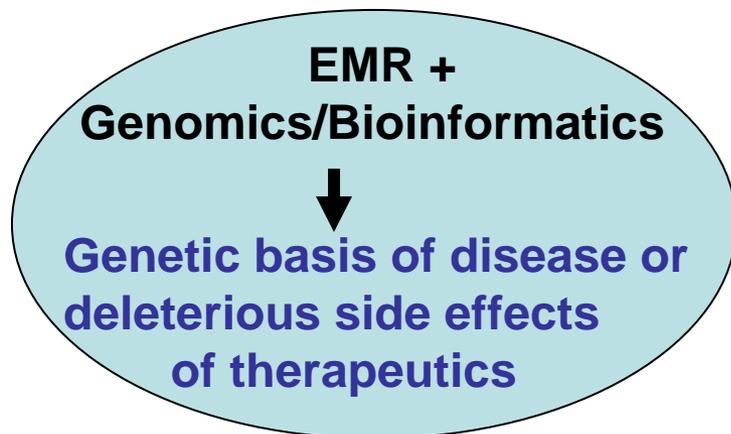
Rational design of therapeutics based on clinical and genomic knowledge of diseases and adverse drug reactions in sub-populations

***A Partnership between WiSys and
Marshfield Clinic to tap the enormous
scientific potential through
collaborative R&D***

- **Benefit for both institutions**
- **Establishes high-caliber R&D in System campuses**
- **Benefits the state**

***Establish ~25 long-term high-caliber
R&D programs***

1: Genomics/bioinformatics knowledge to new therapeutics



- large market
- full margin
- longer shelf life
- lesser competition
- 7-10 yr development
- large investment
- clinical trials
- high risk of failure

Drug development

- Computational protein modeling
- Rational drug design

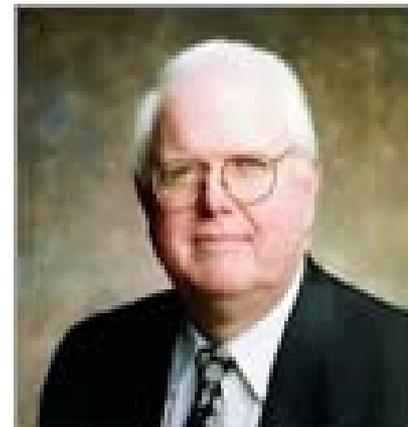
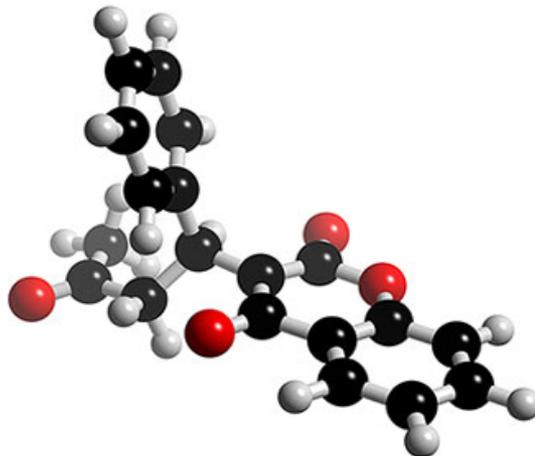
First project initiated in June 2007

Making safer, high-efficacy anticoagulants: Warfarin



UW Eau Claire

David Lewis & Research Team



Marshfield Clinic

Michael Caldwell

Molecular designing of therapeutics

- **Student training**
- **Extramural funding**
- **Marketable IP and products**

Ongoing collaborative discussions

UW-La Crosse	Edema device
UW Milwaukee	Edema screen
UW Milwaukee	Peripheral neuropathy measurement
UW-Madison	Prostate cancer
UW-River Falls	Pathogenesis related bacterial signals
UW-Stout	Anticancer compound screening
UW-Stout, UW-River Falls	Tissue engineering and cancer models
UW-Oshkosh	Markers for irritable bowel syndrome
UW-Stout	Glaucoma markers
UW-Madison	Bioinformatics

Long-term R&D programs

- 1. Identify key players & programs**
- 2. Pool resources**

WiTAG: WiSys Technology Advancement Grant

WiTAG, A million dollar initiative to stimulate R&D

- **Establish long-term programs**
- **Validation data to support extramural funding**
- **Release-time for faculty to conduct R&D**
- **Post-doctoral fellows and assistants**

Leveraging R&D Funds

Partnerships with:

First Phase

- *Applied Research Grant, Prototype Development Fund*
- *WiSys -WiTAG*
- **Campus Foundations**
- **Campus Administrations**

Second Phase

- **State matching funds**
- **Industry**
- **Distinguished Professorship Program**
- **Special Federal Grants (Core facilities)**

Pooling resources to achieve common goals

New research programs initiated by leveraging Funds from WiTAG, campus, System and companies

PI/Campus	Technology/Application
Lyden, River Falls	Tissue eng, Vaccines
Carlson, River Falls	High oil corn
Montte, La Crosse	Antibacterial agents
Hamilton, Platteville	Conductive polymer
Hisham Abdel, Platteville	Machine tool wear
David Lewis, Eau Claire	Warfarin derivatives
Gibson, Oshkosh	Solid-state lighting
Zach, Stevens Point	Nanotechnology
Chen, Green Bay	Finger print tech
Chen, Milwaukee	Corona discharge
Ezenwa, Milwaukee	Osteoporosis device

**Pooling resources allows for hiring post-docs, research assistants
and planning 2-3 year research programs**

WiSys partnering with the System to provide release time for faculty to apply for extramural funding applications

PI/Campus	Subject
Nguyen, Stevens Point	Ultra-fast laser
Zach, Stevens Point	Catalysis for biofuels
Lewis, Eau Claire	Anticoagulants
Waraczynski, Whitewater	CNS, Neurochemistry
Zorn, Green Bay	Biomass conversion
Beyer, La Crosse	Organic/ inorganic systems
Weaver, La Crosse	Amyloid, Alzheimer's
Li, Platteville	Optoelectric devices
Jadaan, Platteville	Biocompatible dental ceramics
Ghenciu, River Falls	Spaces operators

- One course release time to write grant application
- Faculty will submit application draft to WiSys

Build partnerships with local small businesses

- ***Campus technology for local business growth***
- ***Build business/public support for System***
- ***Key player in the technology-based business growth of Wisconsin***

Height-adjustable science station

- Collaborative development of Science Station among Spectrum Industries Inc. (Chippewa Falls), UW Stout and UW Madison
- Accessible to disabled persons
- Marketing by Spectrum Industries

*Menomonie
Chippewa Falls*



High-oil corn

- Molecular marker assisted breeding
- Collaboration among UWRF,
BioDiagonistics Inc. (River Falls)
and Brown Seed Genetics (Bay City)
- Food, animal feed and biofuel

River Falls
Bay City



Facilitating Industry/Campus Collaborations

Weinbrenner Shoe Company (Merrill, WI) is interested in developing a new test system for safety shoes, incorporating nanometal to reduce weight and new shoe designs

Partnership with UW-Stout, UW-Eau Claire, UW-Milwaukee and UW-Oshkosh

Merrill



WiSys is working with:

Academic and Student Services

Office of Finance

Office of General Counsel

Office of Government Relations

*WiSys is poised to be a strong partner and
lead organization for the technology growth
of System campuses*

Thank You