

Research Translational Activities at UC Davis

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Options for Research Translation (RT)

Activities appropriate for RT:

- Partnerships with government
- Technology transfer to commercial sector
- Communication of research results to broader audiences

RT activities at UC Davis:

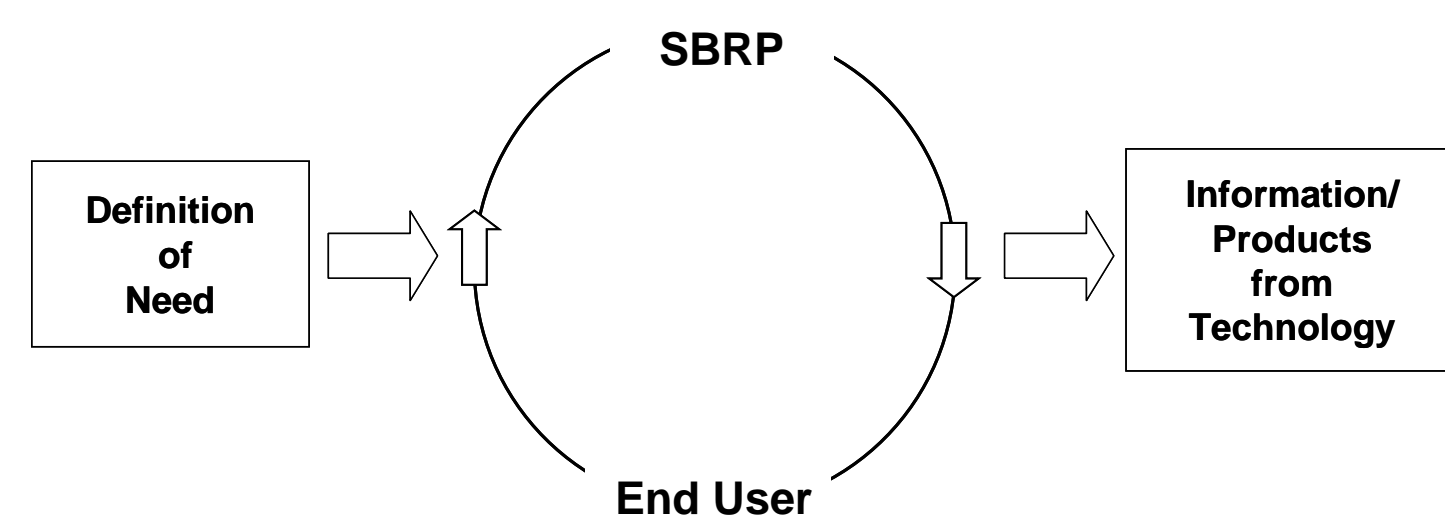
Interactions with government

- Participation in USEPA Endocrine Disruption Panel
- Seminars at Cal/EPA (DTSC, CDPH)
- MTBE/TBA project in Glennville/CA
- Antimicrobial Session in 2008 PORS Meeting, Davis, CA
- FDA meeting: Triclosan and Ryanodine Receptors
- NBN network: US EPA, Region 10
- Cell-based assay for dioxin like compounds (USEPA)
- ATSDR seminar on naphthalene toxicity MOA
- ELISA method for dioxin like compounds: USEPA/Battelle
- “Toxicology in the Fast Lane”, USEPA
- Enhanced cell-based assay for dioxin-like compounds: Europe
- Groundwater contaminants modeling programs: USGS

Technology transfer to commercial sector

- Xenobiotic Detection Systems
- Arete Therapeutics Chronological business development: Xenobiotic Detection Systems -> Arete -> Synthia-LLC™
- Synthia-LLC™
- Entrepreneurship Academies (GTEA)

Technology Transfer:
An Iterative Process



Communication of research results to a broader audience

- Research Updates (Legislators, Government Regulators)
- California Legislature (in future)
- Research Brief, NIEHS
- Entrepreneurship Academies (GTEA)
- Green Science Policy Institute

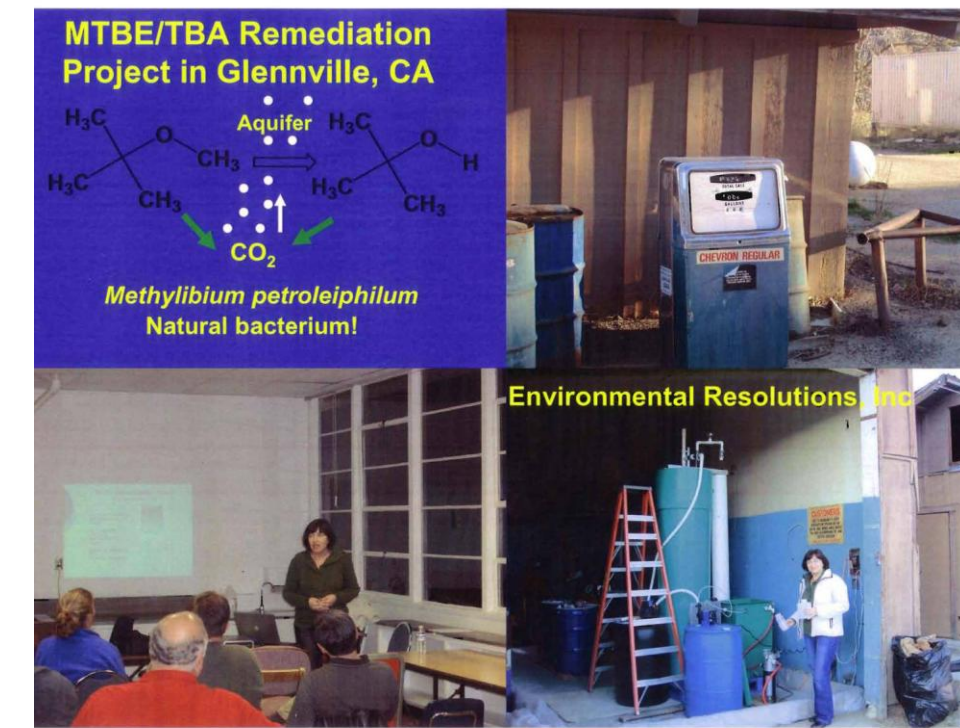
Some of the above are exemplified in the next columns.
Other activities not highlighted are open for discussion

Successful RT Examples

Partnerships with government

MTBE/TBA project in Glennville/CA

Situation: Drinking water contaminated with MTBE/TBA, 1998



Remediation began in 12/08, Process for 6 months
Decrease in MTBE/TBA,
Partners: Water Boards, CDPH, community

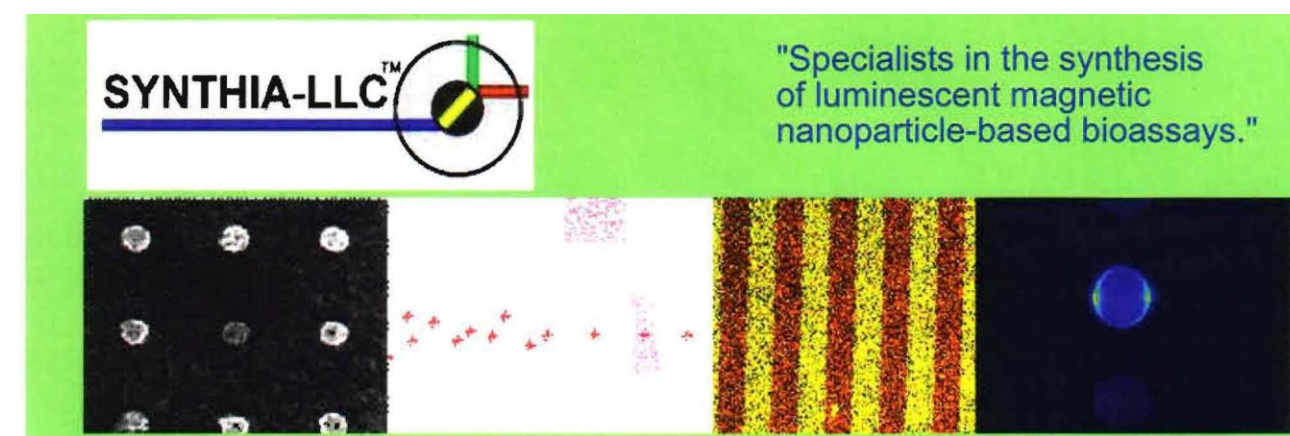
Cell-based assay for dioxin like compounds (USEPA)

The XDS CALUX® Bioassay uses:
 US EPA SW846 Compliant ← 2008
 Licensed to the US FDA
 Used in US EPA studies
 Used in US Center For Disease Control studies
 Approved by the European Union
 Approved by the Japanese Government
 Approved by the Belgium Government's BELTEST
 Animal friendly, we do not test with animals

CALUX: Firefly Luciferase

Technology transfer to commercial sector

Research: IAA + Nanotech + Magnets =



Synthesizing discoveries in immunosensors and nanotechnology
Synthia brings together developments in biology and engineering, offering new technologies for the rapid, inexpensive, portable detection of pathogens, toxins and DNA in our environment, food and bodies.

Outcomes:

- Two rounds of funding from transnational company for pesticide detection using IAA
- Discussions with companies in China

Entrepreneurship Academies (GTEA)
Laboratory results to commercial venture(s)



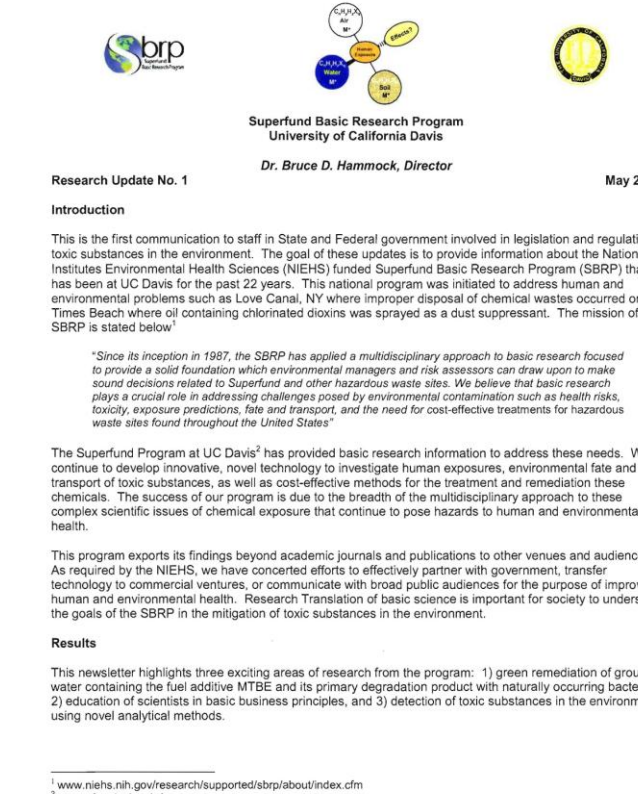
Innovation Exercise
Under the leadership of Andrew Hargadon, UCD
GSM attendees are taught the importance of
pitching the concept intellectual property
market evaluation technology validation
building a team market validation
business models

The Kauffman foundation is a major supporter. SRP provides travel funds for SRP attendees

Communication of research results to broader audiences

Research Updates (Legislators, Government Regulators)

Why? Regulators, legislators may use technical information for decision processes



May 2009

- MTBE/TBA remediation
- Entrepreneurship Academies
- Bioanalytical Dioxin Analysis

November 2009 (in preparation)

- BTX-Ethanol interactions in groundwater
- Multianalyte detection of proteins-partner with USDA
- Facile PBDE analysis by IAA

Research Brief, NIEHS:

November 2009: Model for movement of surface contaminants in storm water runoff (in press)

Future Research Translation Activities

California Legislature Interactions

Lobbying Dollars California Legislature, 2007*

Rank	Group	\$ 10 ⁶
1	Western States Petroleum Association	10.59
2	California State Council of Service Employees (SEIU)	10.29
3	Bromine Science Environmental Forum (Citizens for Fire Safety)	9.13
4	California Teachers Association	7.98
5	Blue Cross of California	6.22
6	California Hospital Association	5.96
7	American Chemistry Council	5.72
8	California Chamber of Commerce	5.64
9	Morongo Band of Mission Indians	4.39
10	AT&T	4.22

PBDEs?

*S. Goldmacher, Sacramento Bee, March 29, 2009

Is there a role for SRP for technical input during the legislative process that involves toxic substances in the environment?

Entrepreneurship: GTEA (continue) and an on-campus seminar on entrepreneurship (2010)

Research Brief, NIEHS:

“Lower detection of toxic substances by phage library-enhanced IAAs” (in prep.)

Meeting on Green Remediation: MTBE/TBA

Session	Participants	Goal
Technological aspects of microbial remediation of ground/drinking water	Experts in the field	Description of successes, feasibility, potential for remediation of organic and inorganic contaminants using microbial strategies
Public health/regulatory aspects of application of microbial remediation	Local, State, Federal officials (public health, water, legislative)	Characterization of research needs, current impediments, or regulatory constraints
Strategy for acceptance/consideration of microbial remediation	All of the above	Discussion of a strategies for implementation of microbial remediation of contaminated ground/drinking water

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