The School of Plant Sciences

ARIZONA

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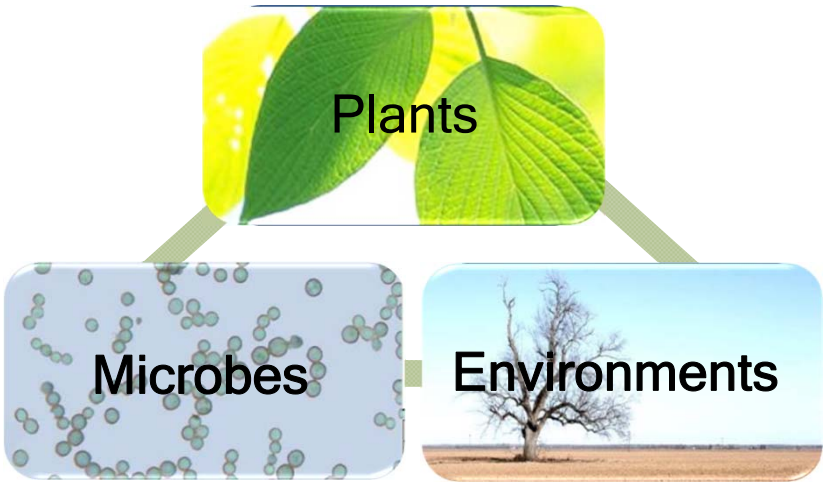
We work on…



Various production systems

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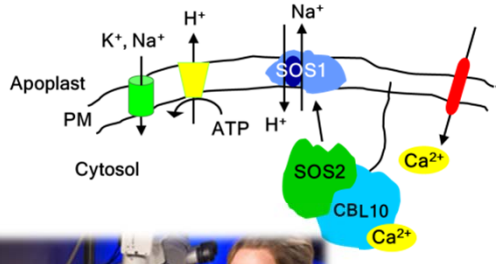
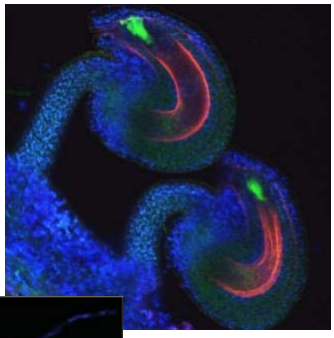
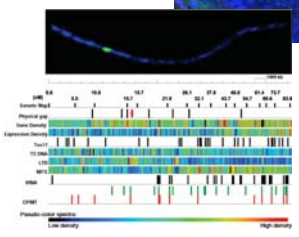
From cutting-edge sciences…







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…to innovative applications!

Urban agriculture

Phenotyping in fields

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…in various crops for food, feed & quality life!

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…beyond your imagination!!

Undergraduate Education

School of Plant Sciences

College of Agriculture and Life Sciences

ARIZONA

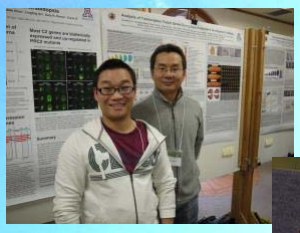
Majors and Minors in:
Plant Sciences
Sustainable Plant Systems

Graduate Programs

School of Plant Sciences

College of Agriculture and Life Sciences

MS and Ph.D. in Plant Sciences and Plant Pathology



7,212,010,600

US Census Bureau
2/9/2014 8:55PM

Grand Challenge Question

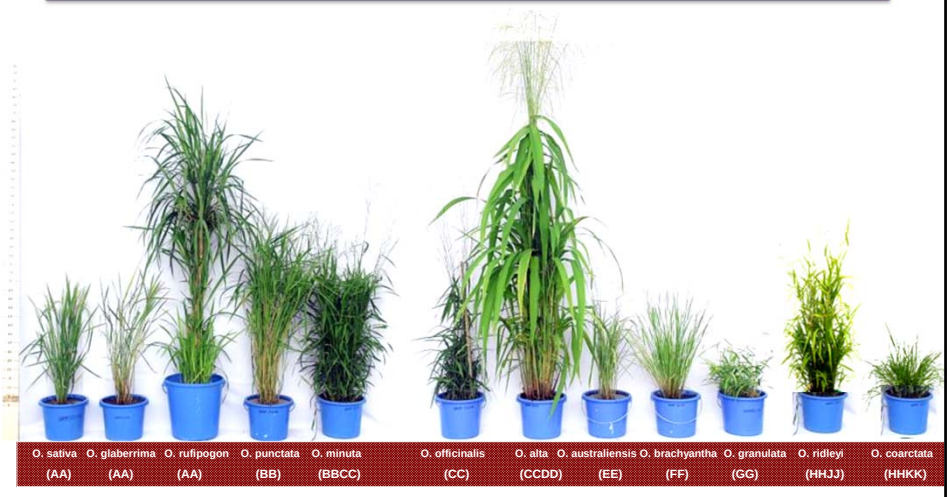
How do we grow enough food to feed the world in < 40 years?

New varieties are needed with 2-3X yield
BUT
require less water, fertilizer, pesticides & land

"Green Super Crops"

Slide by Rod Wing

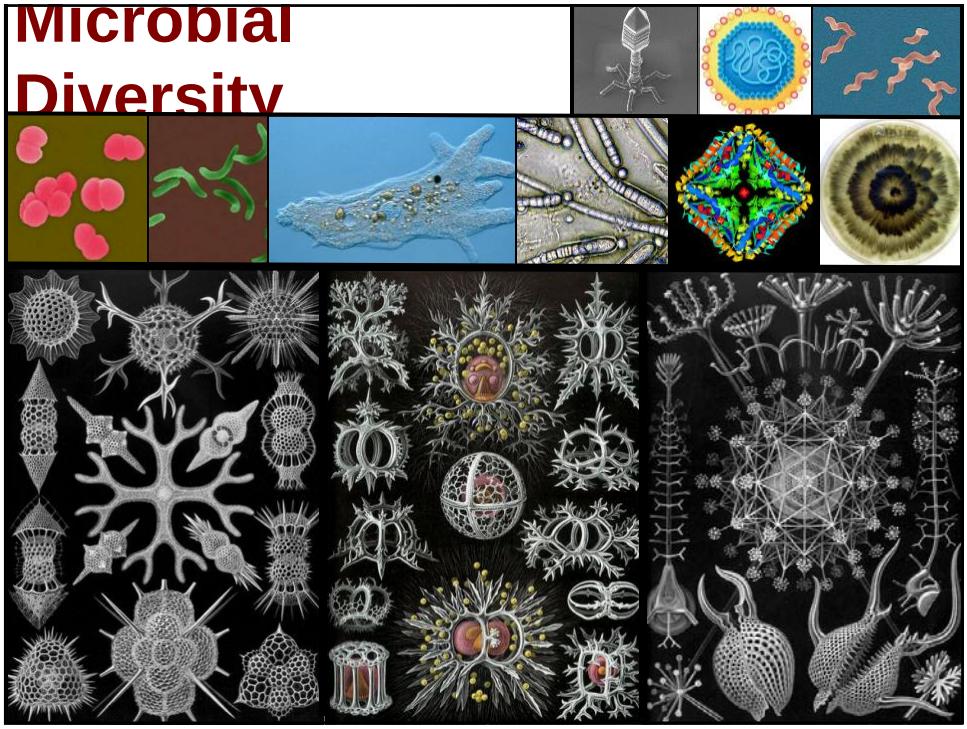
Diversity in wild rice species



Traditional crop improvement (breeding) may have overlooked important key genes to develop 'Green Super Crop'

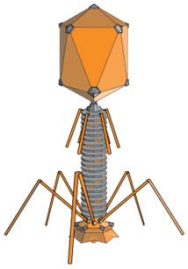
After slide provided by Rod Wing

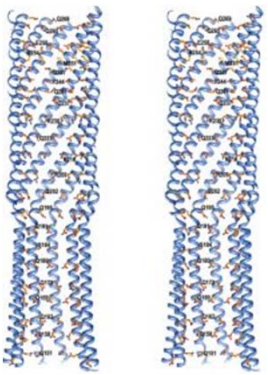
Microbial Diversity

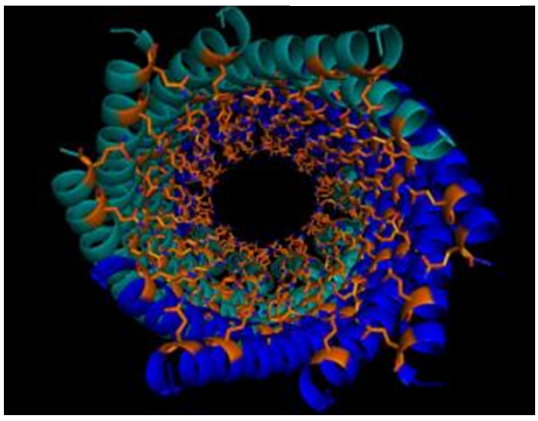


Virus Structure and Morphogenesis.

Dr. Bentley Fane and his research team recently solved the first atomic structure of a virally encoded, DNA translocating conduit.







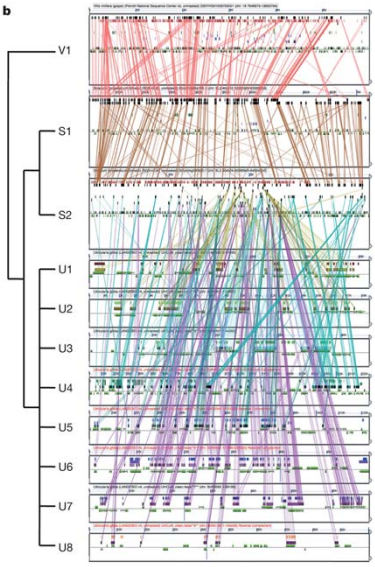
Growing Gourmet Mushrooms that Recycle Waste

Dr. Barry Pryor is developing systems for recycling landscape and consumer waste products as substrates for growing gourmet and medicinal mushrooms.

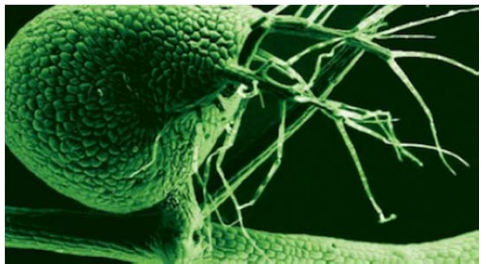
Plant-based Therapeutic

Drs. Eliot Herman and Monica Schmidt work on developing a novel approach to prevent death in premature infants through addition a therapeutic protein to soybeans.

Comparative Genomics

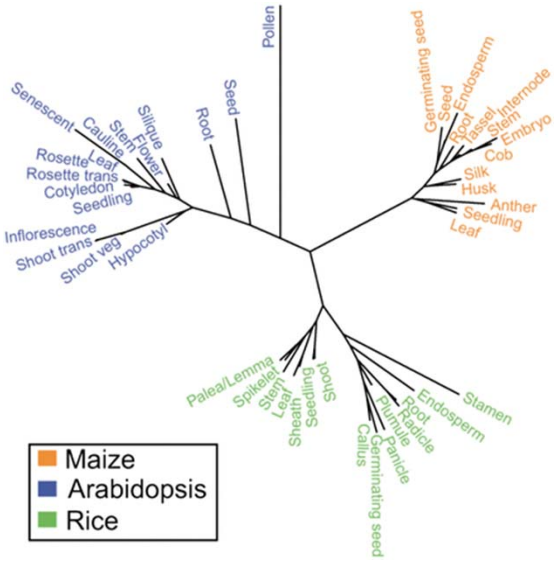


Dr. Eric Lyon developed a comparative genomics software system GoGe and uses for revealing revolution history of a carnivorous baladderwort plant.



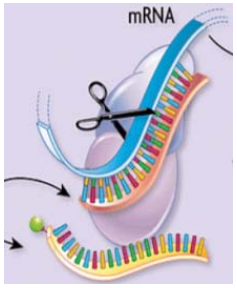
Bioinformatics – Gene Expression in Angiosperm Organ Evolution

Dr. Xiangfeng (Bryan) Wang analyzed transcriptome data of maize, rice and Arabidopsis to find gene expression divergence across organs.

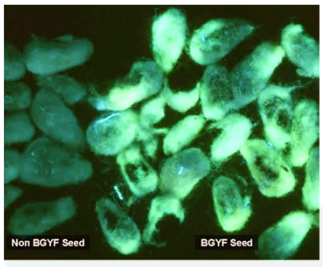


Prevent Citrus Greening Disease

Dr. July Brown works on finding molecular interactions between psyllids and a bacterium causing citrus greening disease.

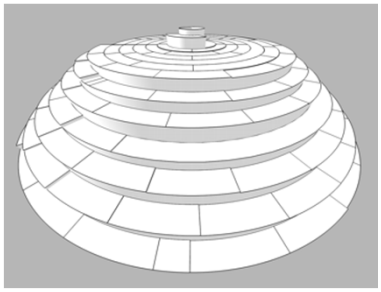


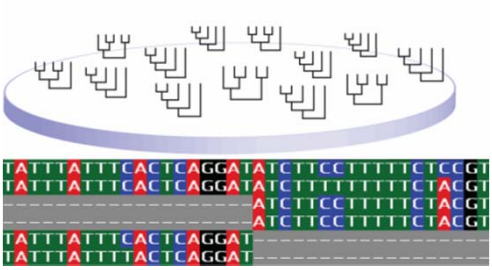
Reduce Aflatoxin in Crops



Dr. Peter Cotty works nationally and internationally on ways to reduce aflatoxins, toxic chemicals that certain fungi produce during crop infection.

Terraces in Phylogenetic Tree Space

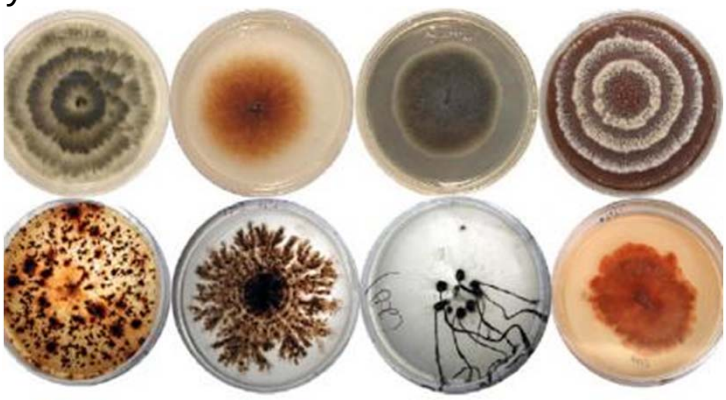




Dr. Michelle McMahon works on computational analyses to assemble the tree of life and developed new algorithms to find evolutionary relatedness.

Revealing Endophytic Fungal Diversity

Dr. Betsy Arnold works on endophytic fungi and their evolution, physiology and morphology in various ecosystems.



Growing Flavorful Strawberries in Arizona

Dr. Chieri Kubota develops ways to grow high quality strawberry hydroponically in Arizona greenhouses for potential winter production.

Drought-tolerant Turfgrass

Dr. Mohammad Pessarakli works on various turfgrass species and cultivars for major environmental stresses (salinity, drought, and heat stress) in Desert Southwest.

Establishing Guayule Production

Dr. Dennis Ray works on introducing guayule as alternative crop in Arizona. Ray lab contributes to breeding guayule and improving horticultural practices to improve yields.

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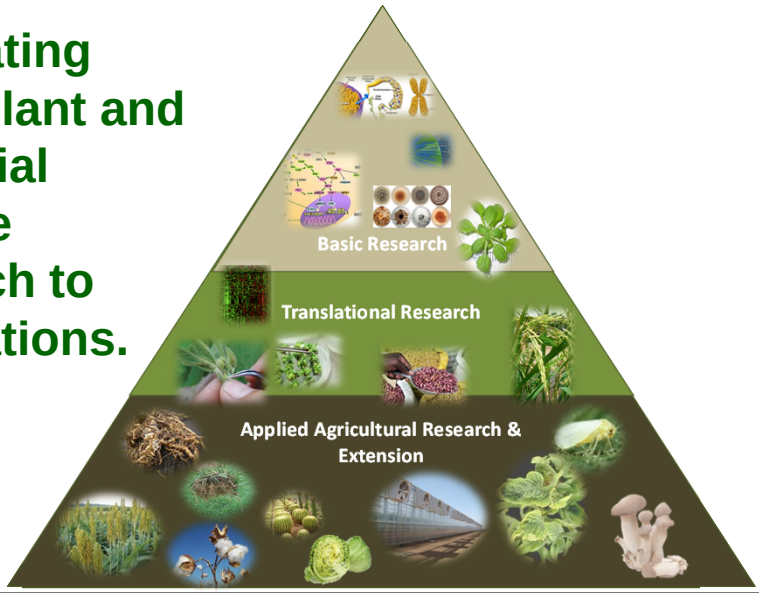
Translating basic plant and microbial science research to applications.




High Throughput Phenotyping

The Arizona Phenotyping Network (AZPN)
Yuma – Maricopa – Tucson

Rod Wing – UA Plant Sciences/Arizona Genomics Institute
Matt Jenks – USDA/ARS Maricopa
Chieri Kubota – UA Plant Sciences/Controlled Environmental Agriculture