



# TULANE NITROGEN REDUCTION CHALLENGE

LEAH BERGER JENSEN, MPH  
DIRECTOR

EMAIL: [tuchallenge@tulane.edu](mailto:tuchallenge@tulane.edu)

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# THE CHALLENGE

Seeks innovative in-field solutions that will reduce crop fertilizers and run-off with the goal of combatting hypoxia & global "Dead Zones".

*\$1 Million Award to Team  
with best in-field solution.*



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NITROGEN  
REDUCTION  
CHALLENGE

# THE CHALLENGE

Two Phases

## PRE-PHASE 1: 2014-2016

- Development & Planning

## PHASE 1: 2016

- Recruitment
- Application
- Technical Submission

## PHASE 2: 2017

- In-Field Trial in Test Plots
- Selection of Winner
- Award of \$1Million



# PARTNERSHIPS

FUNDER:  
MRS.  
TAYLOR

CHALLENGE  
ADMIN

ADVISORY  
COMMITTEE

FARMER:  
HARDWICK  
FAMILY

FINALIST  
TEAMS





# TULANE UNIVERSITY TAYLOR CENTER FOR SOCIAL INNOVATION & DESIGN THINKING



Taylor dissolves boundaries and inspires collaboration between students, staff, faculty, and community members to develop innovative solutions to society's most pressing social and environmental problems. The Center coalesces campus and community engagement in social innovation, social entrepreneurship, and design thinking, providing a unique interdisciplinary intersection of thought and action on our campus and in our local and global community.



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CHALLENGE

# THE INTERNAL TEAM

## CHALLENGE ADMINISTRATORS

LEAH BERGER JENSEN, MPH. Director.

ROBERT KROGER, PhD. Chief Scientific Officer.

JULIE ZONA. Project Advisor.

MARK DAVIS, JD, MLT. Project Advisor.

MEGHAN HUNTER. Program Coordinator.

KENNETH SCHWARTZ. Taylor Center.



# THE INTERNAL TEAM

ADVISORY COMMITTEE

National. Diverse.

## ROLE:

Guidance.

Ongoing Checks & Balances.

Evaluation.

Team Assessment &  
Selection.



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# HARDWICK PLANTING CO.

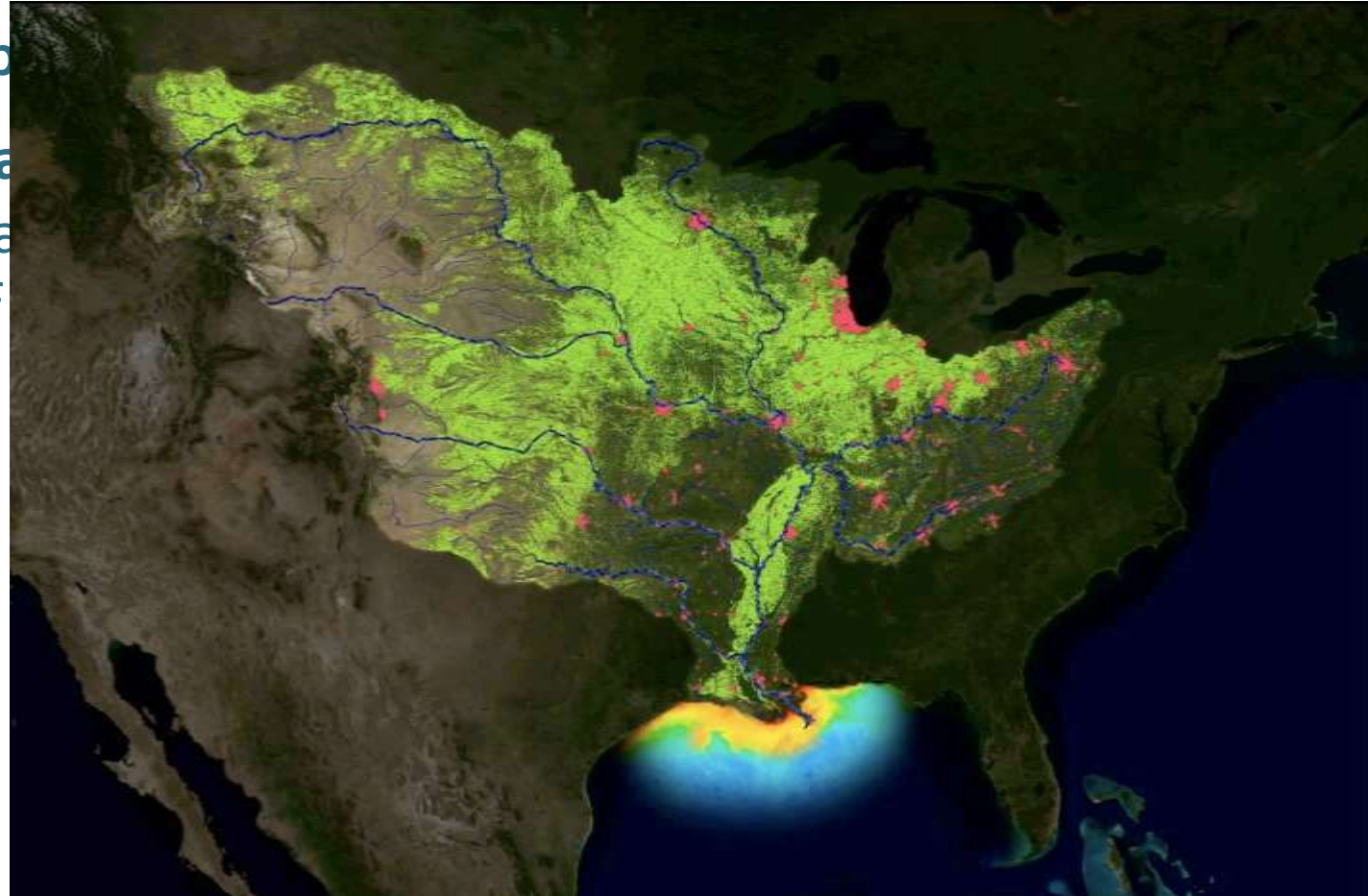


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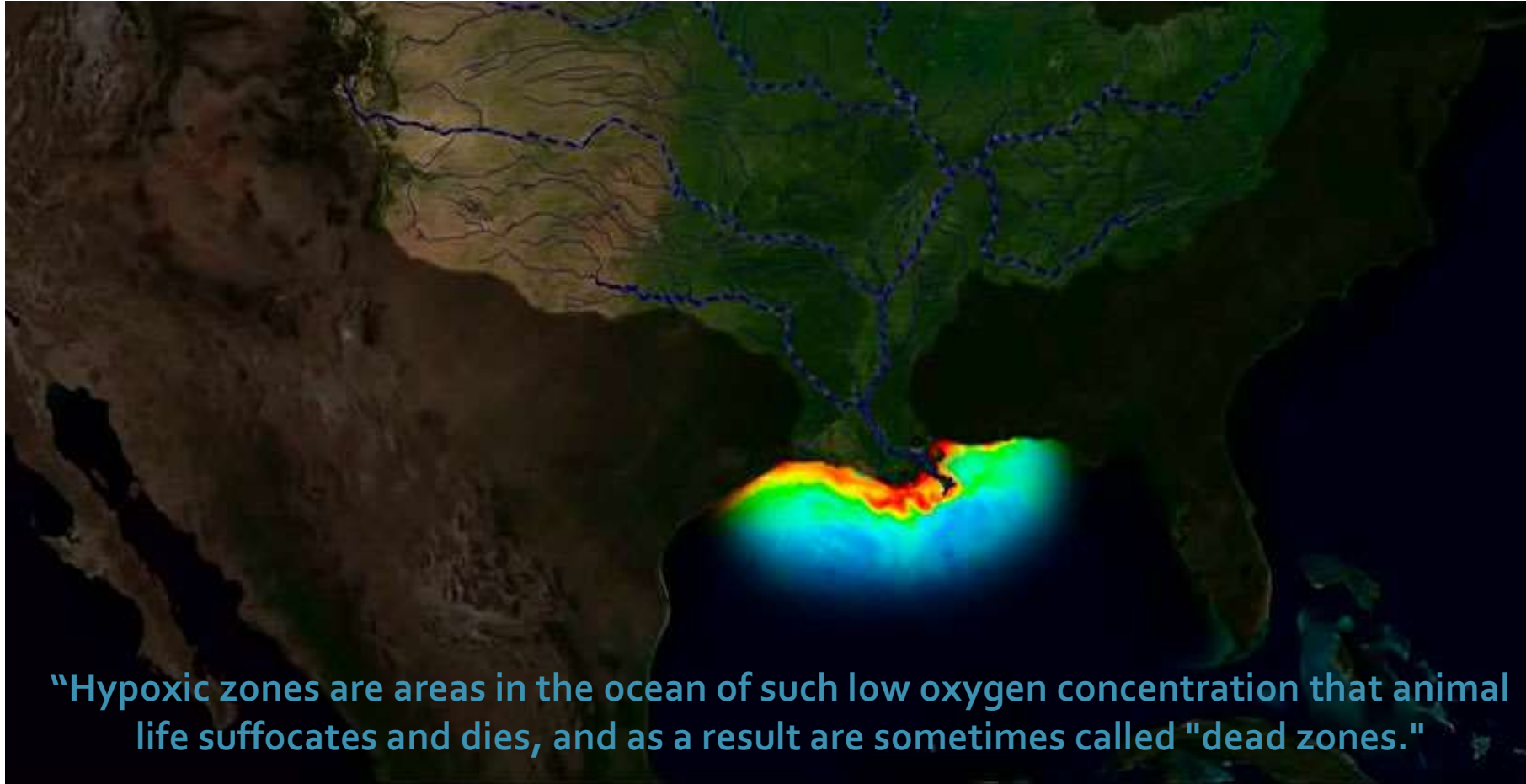
# GOALS

## 1. Dead Zones / Hypoxia:

- a) Combat Hypoxia & Dead Zones
- b) Educate about hypoxia
- c) **Bi-Directional Learning** about the **impact** on communities, Gulf waterways



# WHAT IS A DEAD ZONE?



“Hypoxic zones are areas in the ocean of such low oxygen concentration that animal life suffocates and dies, and as a result are sometimes called “dead zones.”

One of the largest dead zones forms in the Gulf of Mexico every spring. Each spring as farmers fertilize their lands preparing for crop season, rain washes fertilizer off the land and into streams and rivers.”

# GOALS

2. Foster innovation and entrepreneurship
3. Sponsor future challenges



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# THE AWARD

A single award of **\$1,000,000** USD will be awarded to the Team that can meet Challenge Rules.

Funding provided by Mrs. Phyllis Taylor, Board Member of Tulane University.



*Mrs. Phyllis Taylor*

# THE AWARD

A single award of **\$1,000,000** USD will be awarded to the Team that can meet Challenge Rules and can best:

- Maximize nutrient application efficiency
- Enhance yield in a trial agriculture production setting
- Reduce amount of nutrients available to move downstream
- Showcase how innovation can be adopted in a real-world agriculture system



# THE AWARD

Final Evaluation Based Upon:

1. Nitrogen Reduction
2. Cost
3. Yield



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# WHO IS ELIGIBLE?

1. International Teams welcome!
2. All company/organization types eligible:  
*For-profit, Non-profit, Government Agencies, Universities (students and/or faculty and staff) OR any combination*
3. Diverse sectors encouraged:  
*Farmers, Agriculture, Science, Technology, Research, etc.*
4. Team can include an individual *or* multiple people  
(may add additional Team Members at any point throughout Challenge)





# TIMELINE

## PHASE 1

- Registration by *AUG 15, 2016*
- Technical Submission by *SEP 30, 2016*
- Selection of Top 5 Qualified Teams  
*DEC 2016*



# WHO APPLIED?

- 77 Teams registered  
*59 Teams completed registration*
- 43 Teams (*71% of completed registrations*) invited to compete in Technical Submission
- 31 (*72% of invited Teams*) Teams completed competitive Technical Submissions

## *10 International Teams:*

*Australia (x2)*

*Brazil*

*Canada (x2)*

*Chile*

*India*

*Ireland*

*Israel*

*Singapore*



# WHY A CHALLENGE???





# TOP FINALIST TEAMS

Pivot Bio – Berkeley, CA

ADAPT-N – Ithaca, NY

Cropsmith – Farmer City, IL

Stable'N - Carmi, IL



# TIMELINE

## PHASE 2

- Finalist Teams Conduct- In-Field Trial  
*MAR-SEPT 2017*
- Finalist Teams Submit Summary Report  
*OCT 15, 2017*
- Advisory Committee Evaluates Teams  
*NOV 2017*
- Award of \$1 Million  
*DEC 2017*



# TIMELINE

## PHASE 2

### *JANUARY 2017: Team Summit in LOUISIANA*

- Randomly assigned test plots to Teams
- Provided Soil Testing
- Past Farming History to All Teams



# TIMELINE

## PHASE 2

*JANUARY 2017: Team Summit in LOUISIANA*

*MARCH 2017*

- Planting of Plots



# TIMELINE

## PHASE 2

*JANUARY 2017: Team Summit in LOUISIANA*

*MONTHLY MONITORING 2017*

- Teams could have monthly Farm Access to their plots to monitor or conduct various activity as required per their Innovation/Solution



Photo by MHardwick





# TIMELINE

## PHASE 2

*JANUARY 2017: Team Summit in LOUISIANA*

*MARCH 2017*

*MONTHLY MONITORING*

*JULY 2017*

- Today!



# TIMELINE & NEXT STEPS...

## PHASE 2

HARVEST

FINAL SUMMARY REPORT

EVALUATION OF TEAMS

ANNOUNCEMENT OF WINNER &....



...\$1,000,000 AWARD!





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**TOP FINALISTS TEAMS  
& MEAD HARDWICK**