

International Field Years on Lake Erie (IFYLE) Program

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International Field Years on Lake Erie Program (Historical Foundation)

- **Integrative, multidisciplinary, ecosystem-based research program**
- **Based on long-term planning by GLERL**
 - **“A Bold Step Forward: Ecosystem Forecasting, Integrated Observing Systems, and International Field Years for the Great Lakes” (Brandt 2003)**
 - **“Lake Erie Science Planning Workshop”, March 2004**
 - > 50 attendees (scientists, managers)
 - focus on anoxia/hypoxia, HABs, fish production
 - Previous Lake Erie activities
 - Millennium Network, EPA-GLNPO, Environ. Canada

IFYLE Program

(Source of Original Money)

- GLERL wrote proposal to NOAA to charter large research vessel(s)
 - Conduct an integrative, multidisciplinary research program on Lake Erie
 - Spearhead IFYGL II, emphasis on biology & chemistry
 - Understand bio-physical coupling to aid forecasting & allow for ecosystem management
- Proposal was funded (1st learned on Dec. 22)
 - \$450K to charter 90 days of R/V Guardian

IFYLE Program (Major Support)

– NOAA

- ~\$3M (ship support, buoy systems, personnel, cash)
 - 11 GLERL Investigators
- R/V Laurentian and R/V Cyclops to Lake Erie

– US EPA-Great Lakes National Programs Office

- \$450K cost match for ship time (R/V Lake Guardian)

– National Sea Grant

- \$250K to support external (academic) investigators
- Received 41 proposals for > \$1.2M (14 funded)

– Environment Canada (NWRI)

- Moorings/buoys
- Historical Data

IFYLE Program (Other Support)

- **Ohio Sea Grant**
 - \$25K to support research
 - Research vessel, PI housing, website reporting
- **New York Sea Grant**
 - \$25K to support research
- **Pennsylvania Sea Grant**
 - \$7.5K to support research
- **Lake Erie Committee agencies (OH, MI, PA, NY, ON)**
 - Historical database access & vessel support

IFYLE Program (Statistics)

- ~\$5M Direct Costs
- 5 Research Vessels
- 13 Moorings (NOAA and Environment Canada)
- 45 Scientific Investigators
- 18 Universities & Private Institutions
 - 33 Investigators (7 US states, Canada, Sweden, Italy)
- 10 federal, state, & provincial agencies
 - NOAA, EPA-GLNPO, USGS, Army Corps, Environ. Canada
 - 5 Lake Erie fishery management agencies
- > 130 ship days
- > 2,100 Person-Days at Sea

IFYLE Program (Objectives)

– Overarching Goal:

- Provide Lake Erie agencies with ecological understanding & forecasting tools
 - allow for development of integrative ecosystem-based approaches to resource management

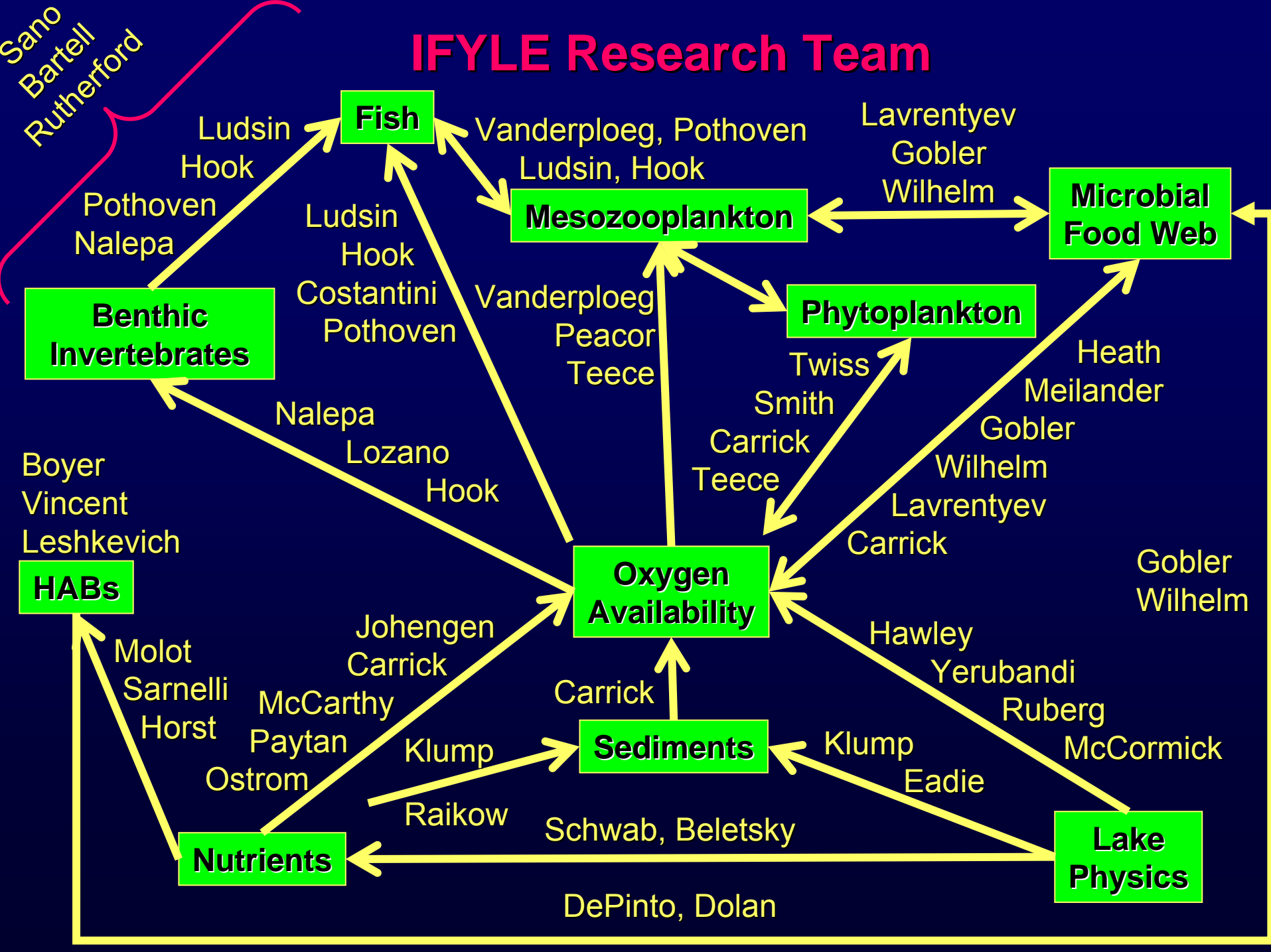
– Primary Research Goals:

- Develop tools to forecast the timing, extent & magnitude of hypoxia in central Lake Erie
- Quantify the ecological impacts (e.g., fish production) of hypoxia & develop tools to forecast them
- Explore the causes of HABs formation in Lake Erie & provide understanding/tools to forecast their formation

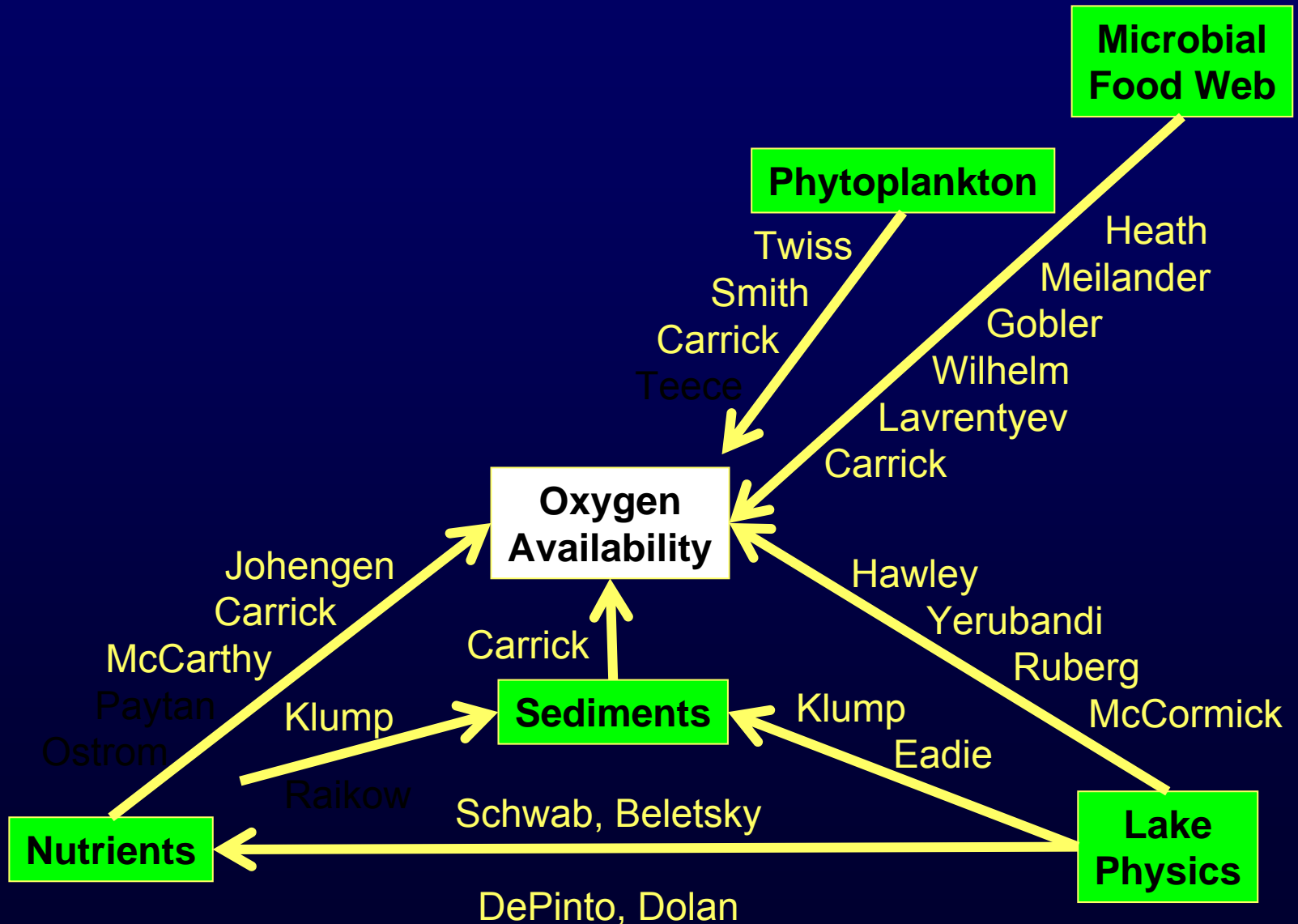
IFYLE Program (Research Approach)

- Although somewhat exploratory & descriptive...
 - Most investigators are testing one or more hypotheses
 - Each research effort is contributing a novel piece of information/data that will help achieve one or more of our 3 primary research goals

IFYLE Research Team

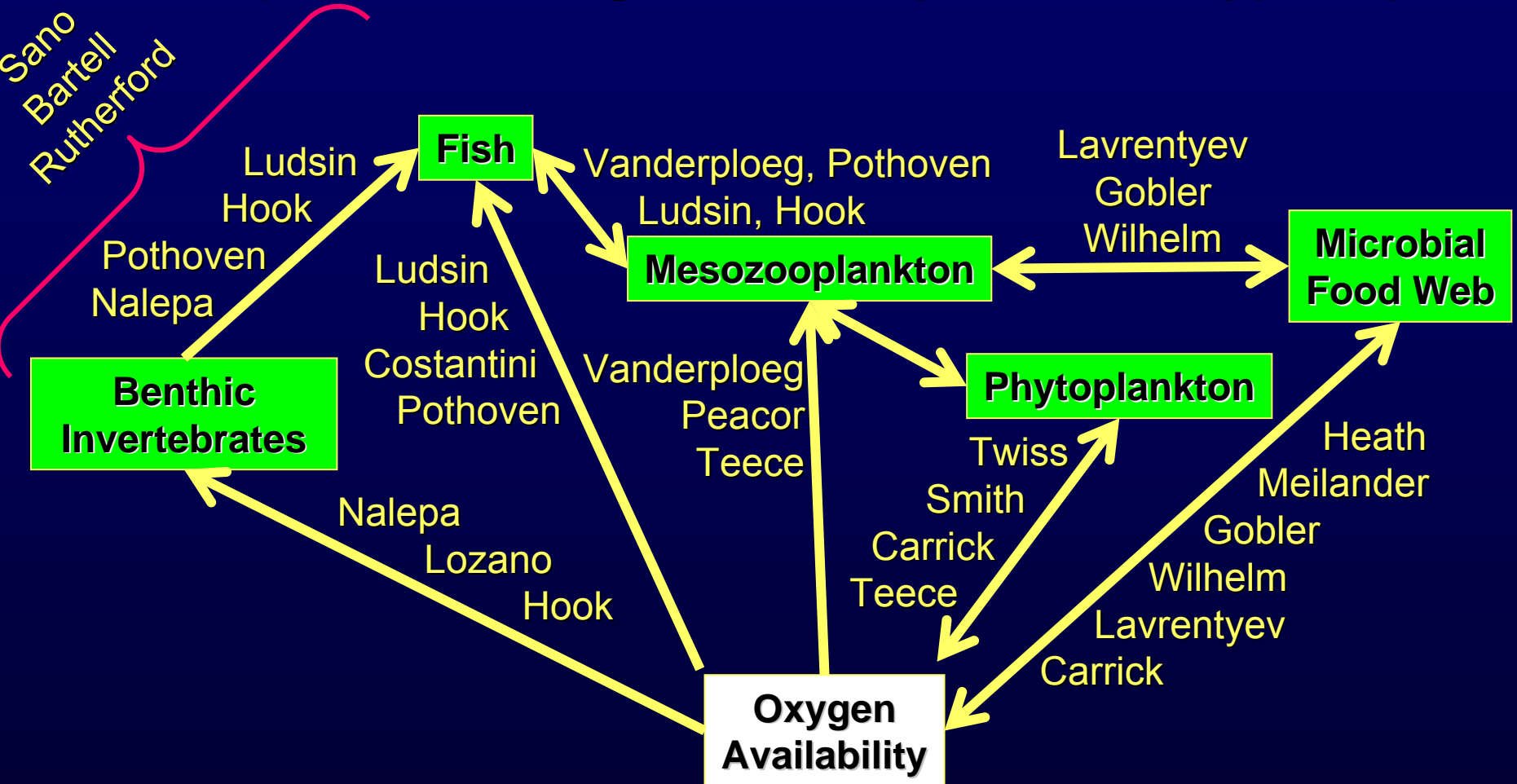


IFYLE Research Team (Goal 1: Drivers of Hypoxia)



IFYLE Research Team

(Goal 2: Ecological Consequences of Hypoxia)



IFYLE Research Team

(Goal 3: Drivers/effects of HABs)

Microbial
Food Web

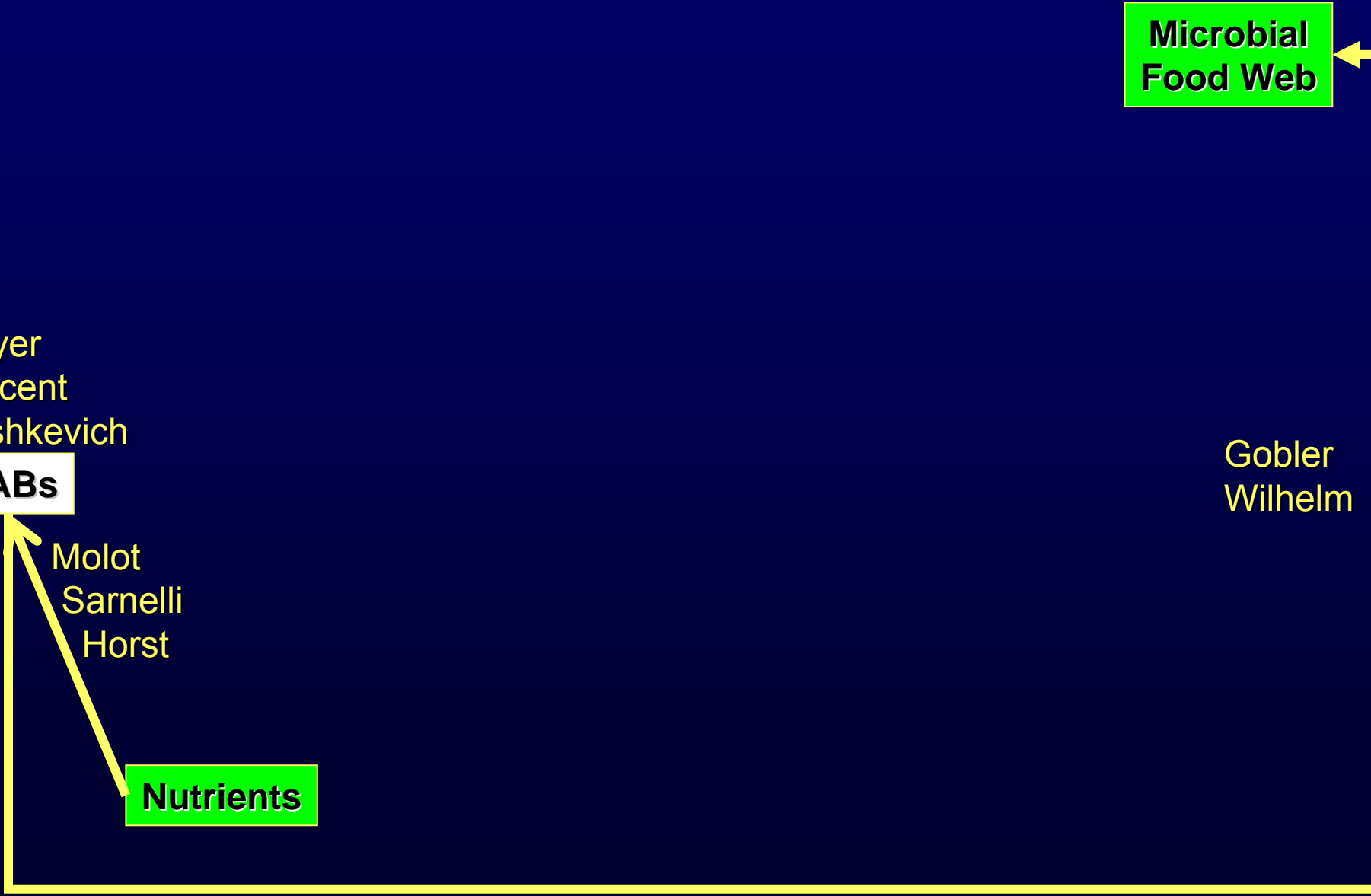
Boyer
Vincent
Leshkevich

HABs

Molot
Sarnelli
Horst

Nutrients

Gobler
Wilhelm



IFYLE Timeline

February 2005 :	Develop collaborations, find funding
March 2005:	Identify university partners
April 2005:	All P.I. meeting to finalize 2005 plans
May – October 2005:	Field season
1-2 March 2006:	All P.I. meeting to plan for 2006
Rest of 2006:	Process/analyze data; refine H_0 s
Spring-Fall 2007:	More focused field season
2008:	Process/analyze data; synthesize findings

IFYLE Program

(The Good, The Bad & The Ugly)

• The Good

- Agency support has been outstanding
 - Lots of in-kind and monetary support for research
- RFP was a success (14 of 41 proposals funded)
 - Lots of good science proposed
- External PIs have been great
 - Willingness to do “applied” work, share data, collaborate
- Cruises happened as planned → safe, productive
- Lots of good data collected
 - Optimistic that we will be able to do “meaningful” science

IFYLE Program

(The Good, The Bad & The Ugly)

• The Bad

- Long delay in getting out RFP → held up by Nat. Sea Grant
 - Little time for PIs to generate proposal
 - May have limited quality of projects
 - New granting mechanism will help
- Some problems with last minute changes in ship availability
 - Some data gaps, stress for me & chief scientists
 - Like to set schedule once and stick by it
- Difficult finding proposal reviewers due to short turn-around
 - A list of potential reviewers & disciplines would be useful
- GLERL seems like a “renegade” agency (not cooperative)
 - Why Lake Erie when EC and EPA are in Superior?
 - In 2007, EC & EPA in Ontario...what about IFYLE?

IFYLE Program

(The Good, The Bad & The Ugly)

• The Ugly

- Providing money to PIs → onerous, slow process
 - Thankfully, formal granting mechanism now in place
- Uncertainty about future...money & ship time
 - Makes future planning difficult & last-minute
 - Like to see multi-year commitments for money/ship time
- Not enough time...
 - to flesh out research program before & after PIs on board
 - to do peer-review on research/cruise plans
 - to develop modeling/synthetic goals *a priori*
 - to get full “buy in” by researchers/agencies
 - to build database so data disseminated in timely manner
 - Planning, planning, planning...in the event \$\$ appears