

# 26<sup>th</sup> World Gas Conference

1 – 5 June 2015, Paris, France



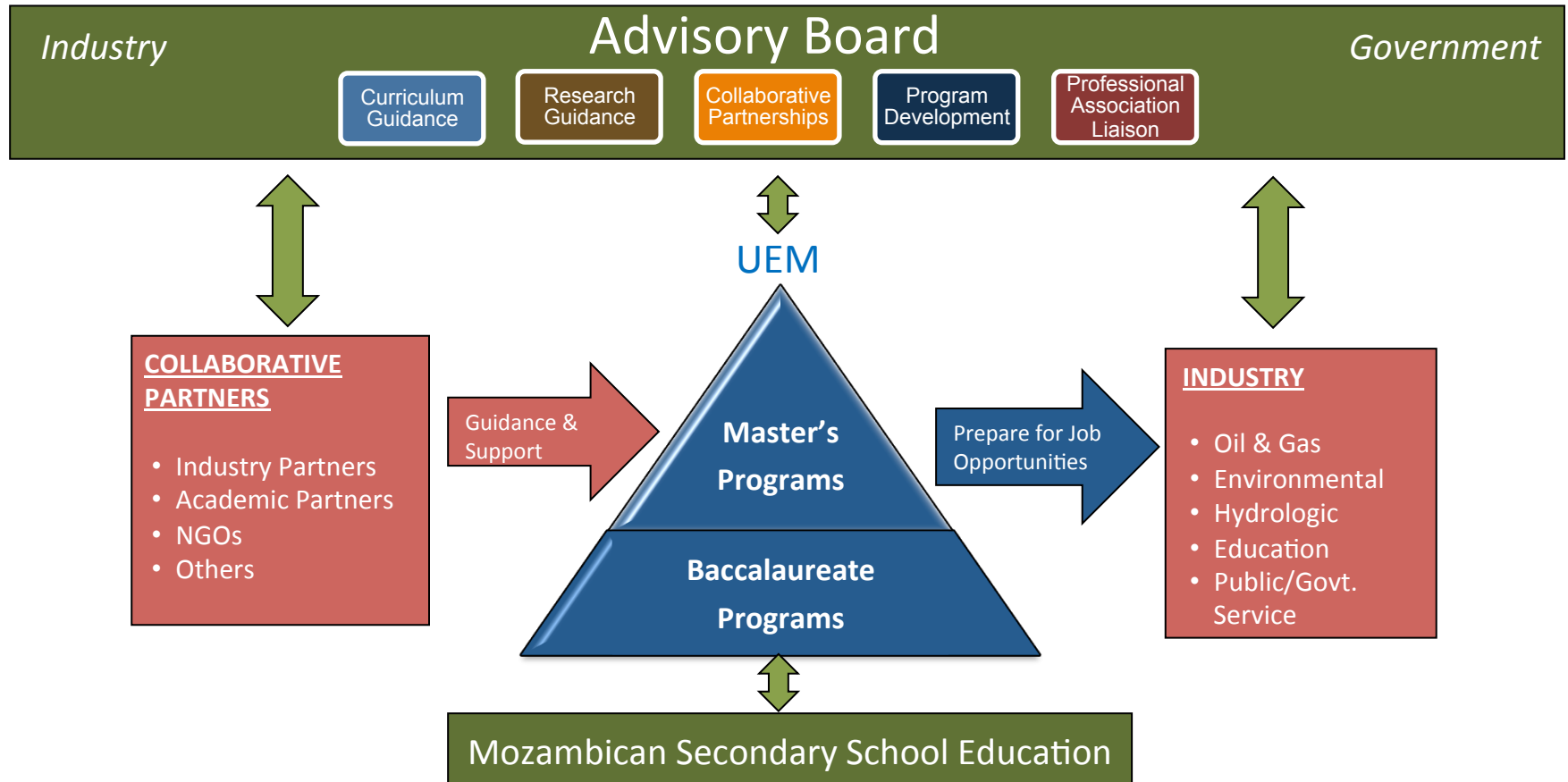
## *SP 11: Battle for Talent*

### MOZAMBIQUE: GROWING ITS OWN TECHNICAL TALENT

Antonio P. Sevilla  
Anadarko Petroleum Company



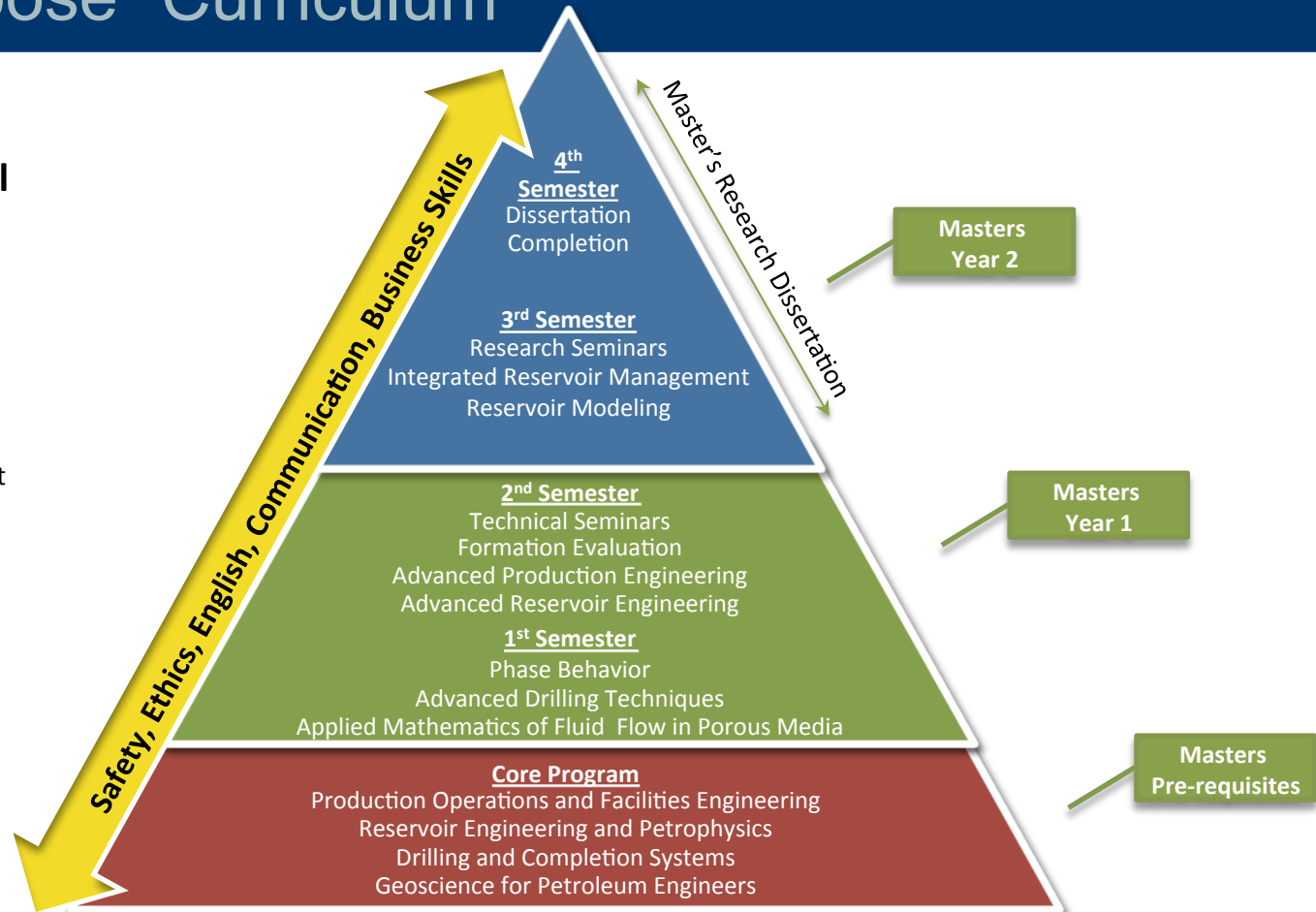
# Collaborative Program Model



# “Fit for Purpose” Curriculum

## Research and Technical Seminars

- Ethics in Engineering
- Technical Communications & Presentation Skills for PEs
- Learning Resources
- Professional Service
- Project Management
- Operational & Risk Management
- Petroleum Geoscience Technologies
- Petroleum Engineering Technologies
- Emerging Technology
- Commercial & Economics
- Scientific Methods
- Research Approach
- Data Analysis
- Literature Review
- Report Writing



# Master's of Petroleum Engineering Program Delivery Evolution

## Base

### Professor Course Delivery

- Synthesize PE content
- Utilize existing subject resources and materials

### Student Capability

- Understand subject
- Pass course
- Utilize course materials

## Skilled

### Professor Course Delivery

- Analyze and evaluate data
- Enhance existing materials

### Student Capability

- Synthesize content across courses
- Apply knowledge
- Integrate previous course materials
- Seek guidance from professor

## Expert

### Professor Course Delivery

- Provide PE subject matter expertise
- Create new materials
- Perform original experiments
- Research and manage process

### Student Capability

- Hypothesize solutions for new problems
- Perform original experiments and research
- Seek guidance from professor and industry subject matter experts

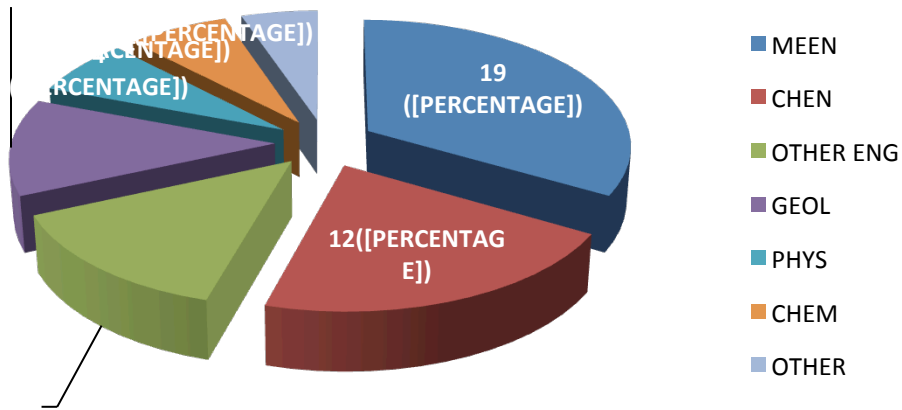
# Student Development

- Master's Year Two and Dissertation: 17 students
- Master's Year One: 19 students
- Core Program: 16 students

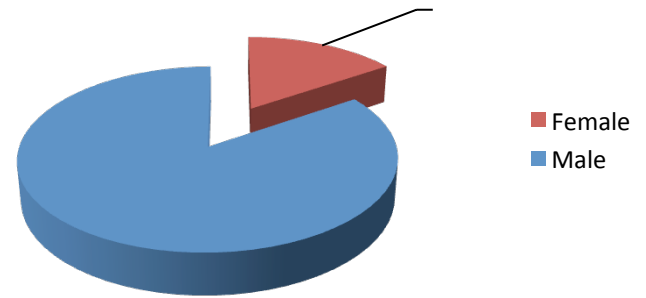


# UEM MSPE Student Profiles – May 2015

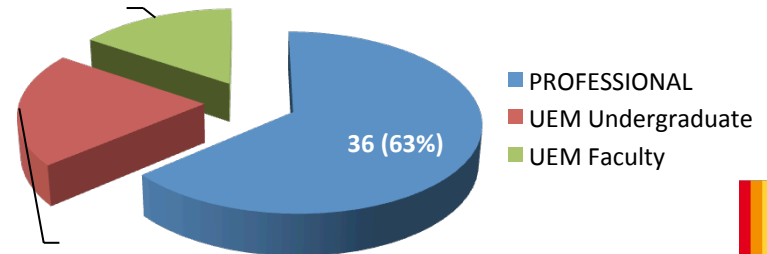
## Students by Undergraduate Degree



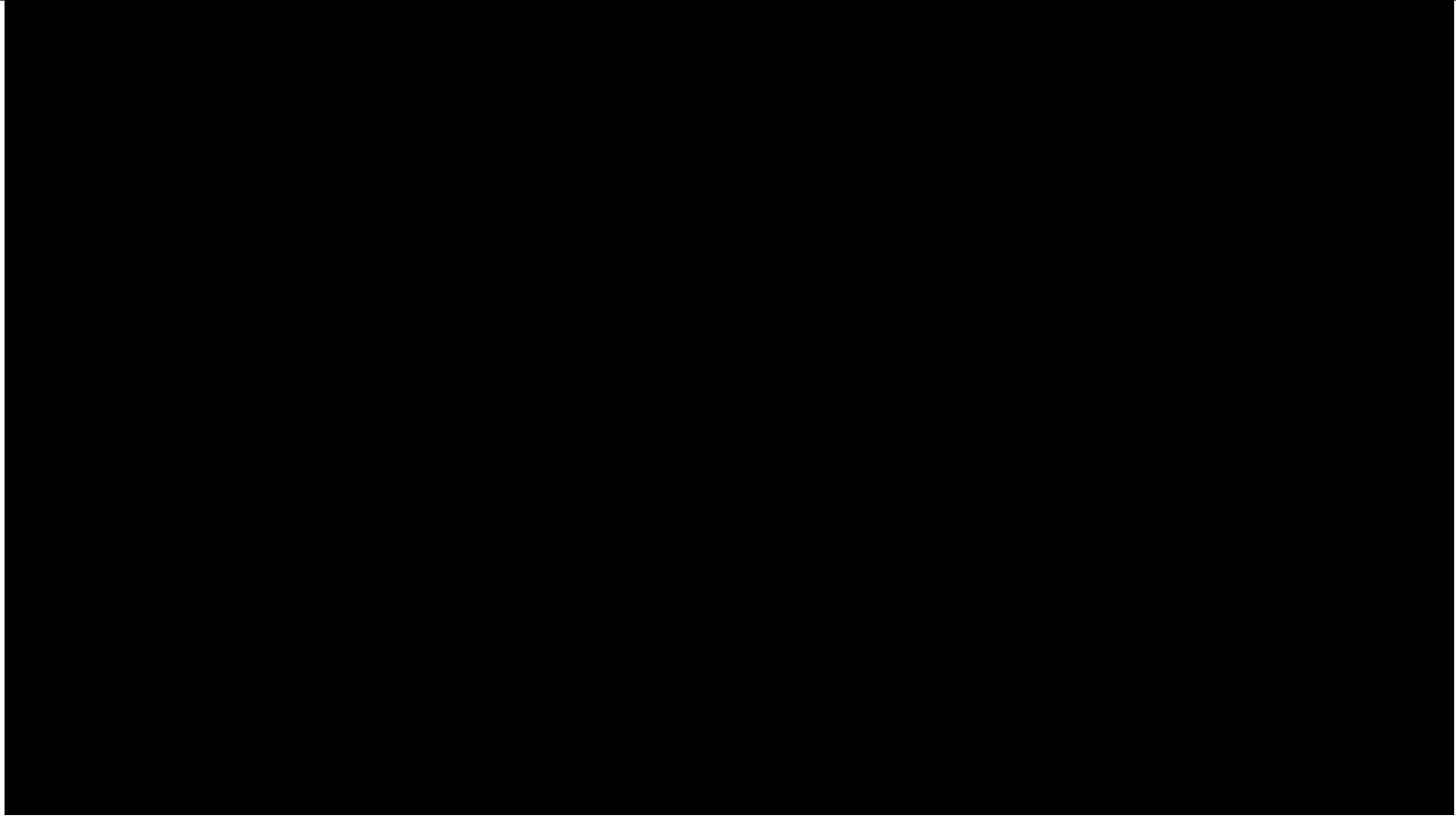
## Students by Gender



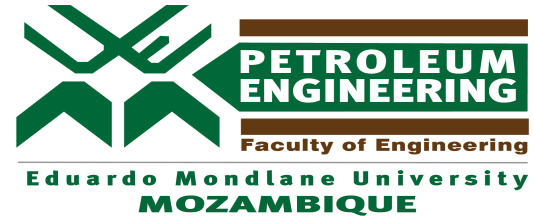
## Students by Source



# Course Delivery Demonstration (Phase Behavior)



# Closing

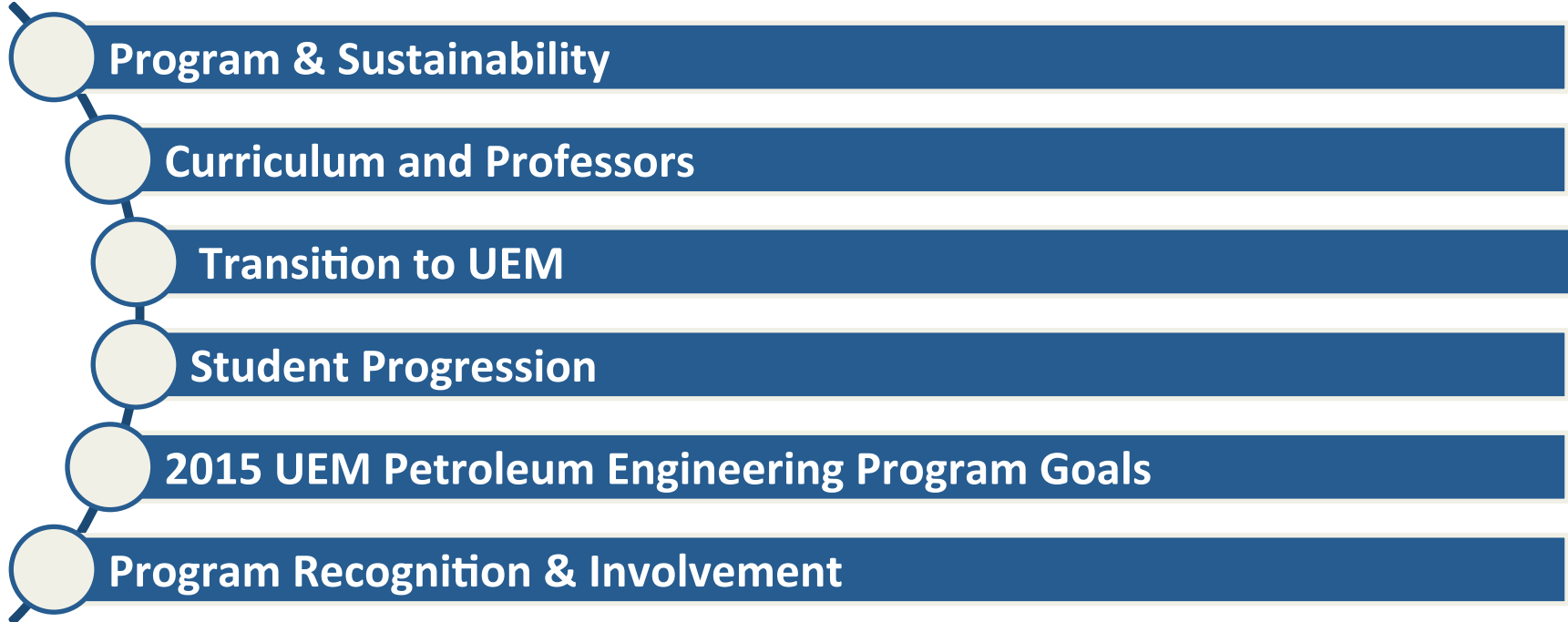




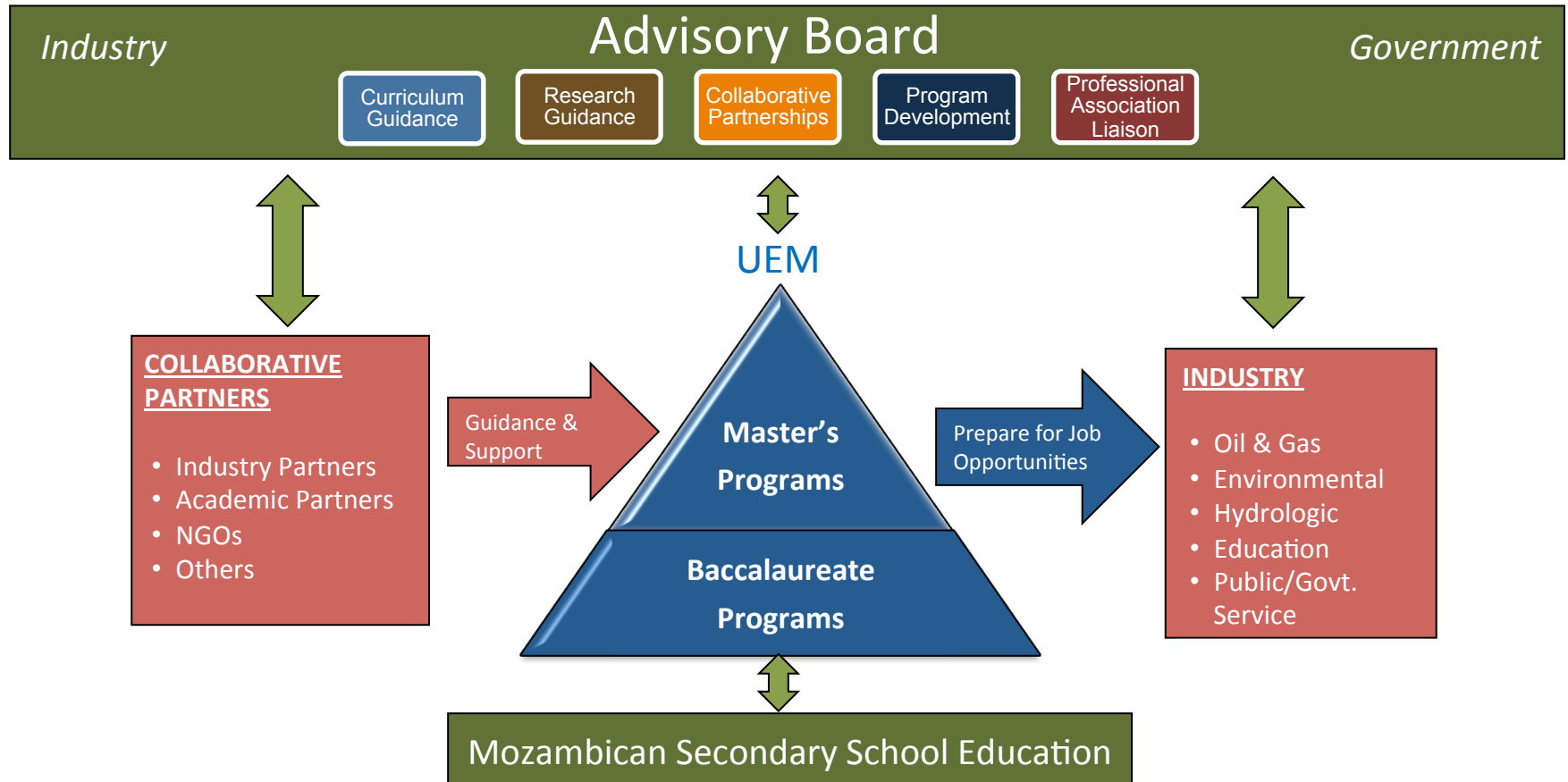


# Full version

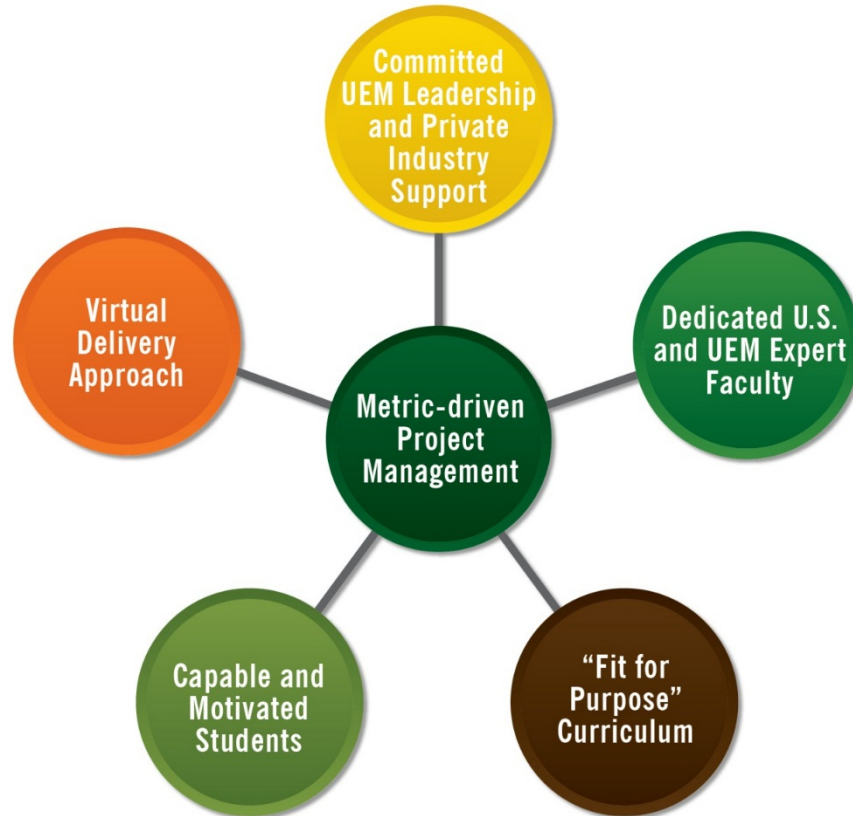
# Overview

- 
- Program & Sustainability**
  - Curriculum and Professors**
  - Transition to UEM**
  - Student Progression**
  - 2015 UEM Petroleum Engineering Program Goals**
  - Program Recognition & Involvement**

# Collaborative Program Model



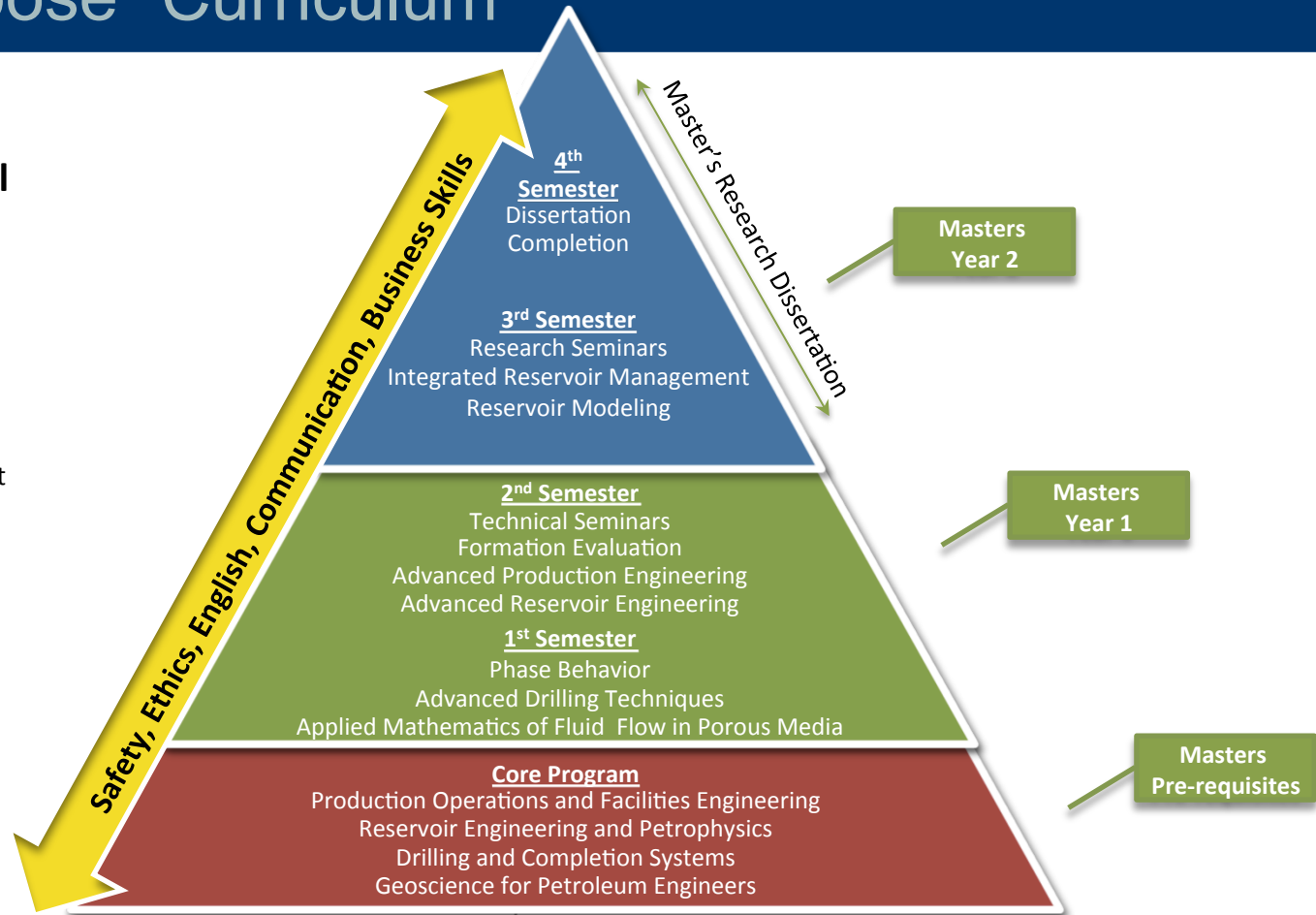
# MSPE Sustainability Components



# “Fit for Purpose” Curriculum

## Research and Technical Seminars

- Ethics in Engineering
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- Research Approach
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# Core Program Professors



## Geoscience for Petroleum Engineers



Dr. Walt Ayers  
Texas A&M University



Dr. Mussa Achimo  
UEM

## Production Operations and FE



Dr. Mauricio Prado  
University of Tulsa



Dr. Alexander Ali  
UEM

## Drilling and Completion Systems



Dr. Lloyd Heinze  
Texas Tech University



Dr. Rui Siteo  
UEM

## Reservoir Engineering and Petrophysics



Dr. Maria Barrufet  
Texas A&M University

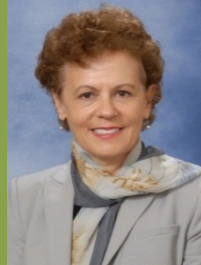


Dr. Luis Lucas  
UEM

# Master's Program Professors



## Phase Behavior of Fluid Dynamics



Dr. Maria Barrufet  
Texas A&M University



Dr. Luis Lucas  
UEM

## Applied Mathematics



Dr. Erdal Ozkan  
Colorado School  
of Mines



Dr. Alexandre  
Kalashnikov  
UEM



Dr. Fabio  
Cumbe  
UEM

## Advanced Drilling Techniques



Dr. Lloyd Heinze  
Texas Tech University



Dr. Rui Siteo  
UEM

## Formation Evaluation



Dr. Thomas Holley  
University of Houston



Dr. Manuel Chenene  
UEM

# Master's Program Professors, continued



## Advanced Production Engineering



Dr. Mauricio Prado  
University of Tulsa



Dr. Alexander Ali  
UEM

## Advanced Reservoir Engineering

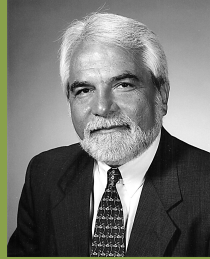


Dr. Erdal Ozkan  
Colorado School of Mines



Dr. Antonio Cumbane  
UEM

## Reservoir Modeling



Dr. Turgay Ertekin  
Penn State



Dr. Antonio Cumbane  
UEM

## Integrated Reservoir Management



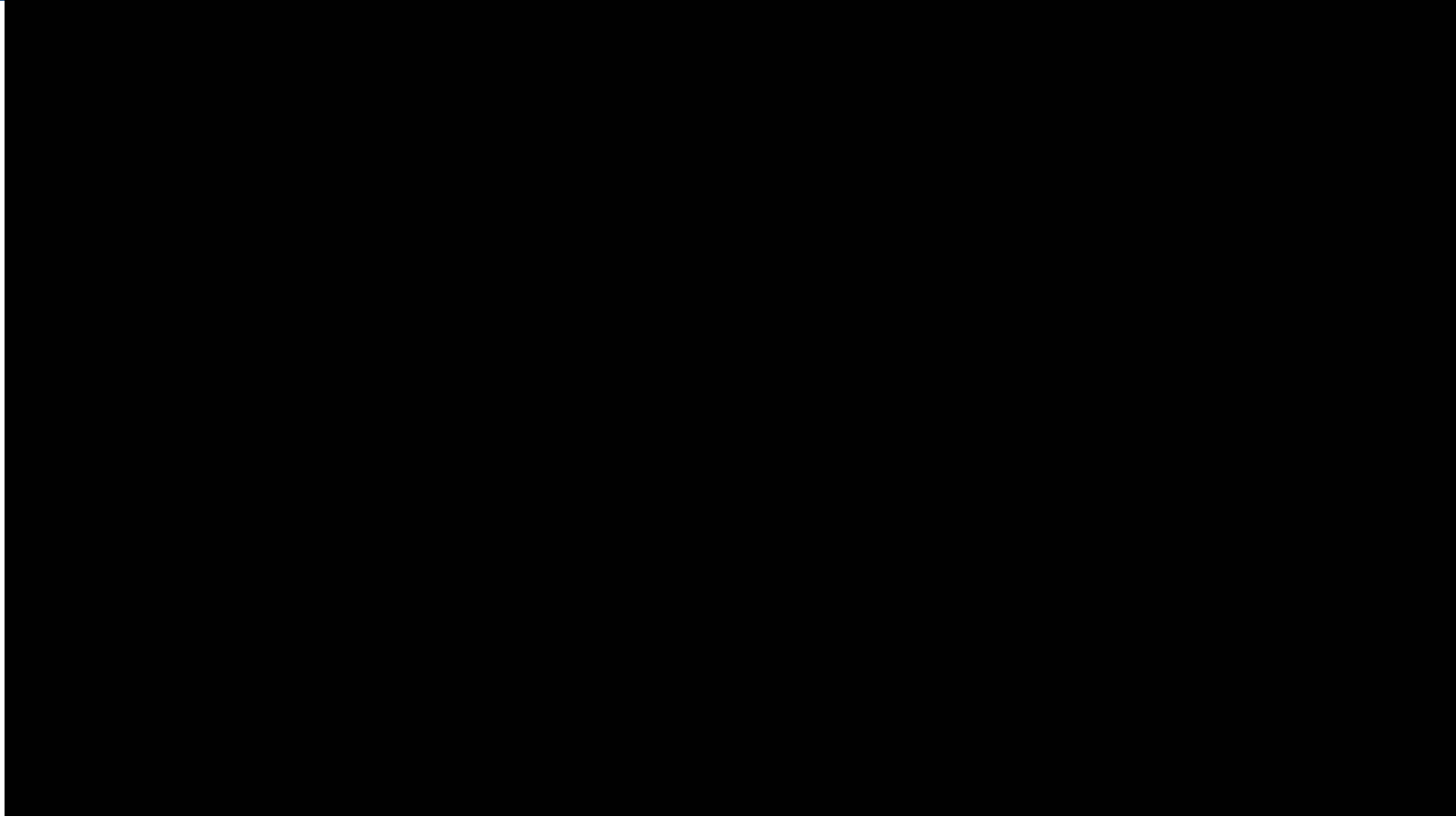
Dr. Mohan Kelkar  
University of Tulsa



Dr. Manuel Chenene  
UEM



# Course Delivery Demonstration (Phase Behavior)



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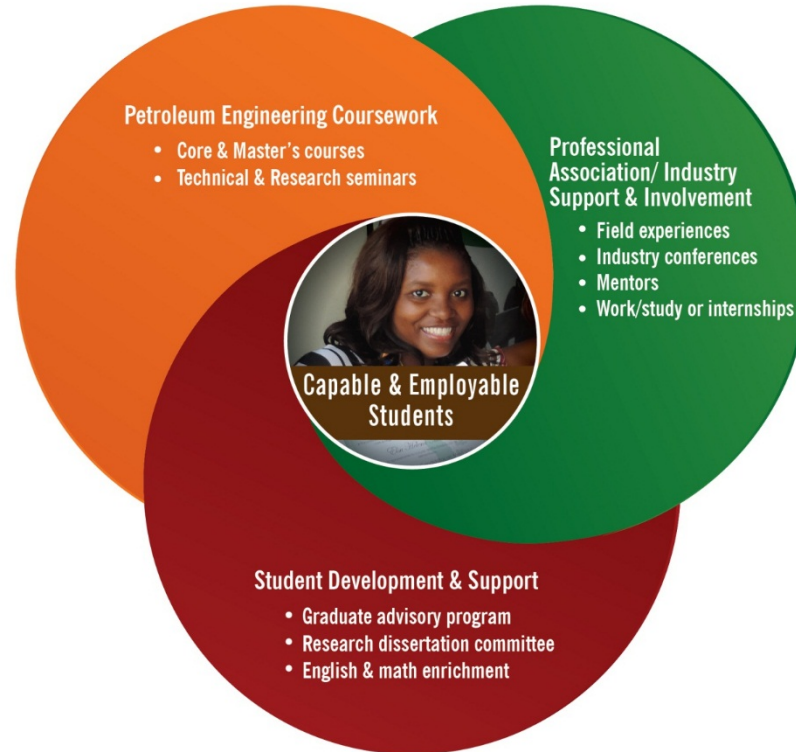
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# Student Capability Building Model – Educating for Employment



# Student Development

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# Summary: 2015 UEM PE Program Goals

Program Area	2015 Goals
<b>UEM Leadership</b>	<ul style="list-style-type: none"><li>• Establish ongoing advisory board</li><li>• Conduct UEM leadership updates and Academic Advisory Council (AAC) meetings</li></ul>
<b>Faculty Development</b>	<ul style="list-style-type: none"><li>• Identify backup professors</li><li>• Provide 2-3 week onsite training to UEM professors at U.S. Universities</li><li>• Identify and begin training future UEMPE faculty</li></ul>
<b>Curriculum and Course Development and Delivery</b>	<ul style="list-style-type: none"><li>• Develop and manage dissertation process guide</li><li>• Deliver remaining technical seminars</li></ul>
<b>Student Selection and Development</b>	<ul style="list-style-type: none"><li>• Establish internship program and facilitate graduate job placement</li><li>• Develop sustainable English Language Training &amp; Math Practice programs</li></ul>
<b>Physical and Virtual Infrastructure</b>	<ul style="list-style-type: none"><li>• Develop and transition Petroleum Engineering guide</li><li>• Transition all technical infrastructure and support to UEM</li></ul>

# Program Coordinators: Markwardt Performance Consulting

**Claire Markwardt**



- Project Team Lead

**Kimberley Behrens**



- Student Selection
- Student Development
- Industry Liaison

**Mary Litwin**



- Virtual Delivery
- MS365/SharePoint
- Resource Library

**Susanne Rothschild**



- Geoscience
- Reservoir Engineering
- Faculty Development

**Lisa Rankin**



- Dissertation/Research
- Production Operations
- English Class

**Erin Murphy**



- Applied Mathematics

**Vicki Johnson**



- Drilling and Completions
- Mud Lab

**Jordan Amis**



- Transition
- Communications
- Technical Seminars



# Appendix

# UEM MSPE Student Profiles – April 2015

## Students by Birth Province

