INCREASING STUDENT RECRUITMENT AND RETENTION IN THE GEOSCIENCES: a Pilot Program

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Daytona State College
COLLEGE STUDENT RETENTION
SECOND EDITION

Formula for Student Success

EDITED BY ALAN SEIDMAN

COLLEGE STUDENTS’ SENSE OF BELONGING
A Key to Educational Success for All Students

Terrell L. Strayhorn
Persistence and Retention Trends and Issues: *getting off on a bad foot?!

- “The community college serves nearly 40% of all college students in the country.”

- “Only about half of first-time community college students persist to the second year…”
...A BRIEF HISTORY

- Introduction to Oceanography Lecture (3-credit hours)
  - Started in 2008
  - First OCE class at DSC
  - No lab available
Created in 2010

Four AA Transfer Tracks
- Marine Science
- Marine Biology
- Environmental Science
- Ocean Engineering

AS Environmental Science Technology
WHY DAYTONA STATE College?

<table>
<thead>
<tr>
<th>Compare</th>
<th>FL Private</th>
<th>FL Public</th>
<th>DSC</th>
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<tbody>
<tr>
<td>Per Credit HR</td>
<td>$1,185</td>
<td>$235</td>
<td>$105</td>
</tr>
<tr>
<td>Per Yr (30hrs/FL resident)</td>
<td>$41,460</td>
<td>$6,576</td>
<td>$3,135</td>
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</table>
MEET OUR PILOT TEAM!

Supporting and Advancing Geoscience Education in 2YCs

Joshua Poniatowski
Academic Advising

Dr. Debra Woodall—
Oceanography, Geology

Autumn Meyers-Parker
Academic Advising

Karen Braley
Chemistry, Biology
Piloting Goals...

INCREASE STUDENT RECRUITMENT AND RETENTION IN THE GEOSCIENCES

Now: Marine Science, Marine Biology, Environmental Science, Ocean Engineering

Future: Geology, Meteorology
Meeting our Goals
Increase Retention

1. “…sense of belonging positively influences academic achievement, retention, and persistence.”

2. “…students that were underchallenged were more likely to leave the college.”

3. “…early engagement in career practices increased retention.”

4. “Students had a better chance of staying in college if they had opportunities to interact with faculty.”
Providing a Sense of Belonging

Importance of Structure

- Fall, 2013
  - New $250K facility/equipment/instrumentation
Providing a Sense of Belonging

Importance of Communication

- **Increase Communication**

  - *Importance of those codes!!*
Providing a Sense of Belonging

Importance of Communication

- Increase Communication
- Re-built AA Transfer Tracks (i.e., Education Plans)

THANKS JOSH AND AUTUMN!!
Providing a Sense of Belonging

Importance of Communication

IMES Pages
Challenging our Students and Early Engagement in Career Practices

Courses Specific to Major

- EVR2001/L
- OCE1001/L
- OCB2000C
Challenging our Students and Early Engagement in Career Practices

ASSOCIATE OF ARTS DEGREE

ENVIRONMENTAL SCIENCE – EDUCATION PLAN

Please note that requirements of the university or college that you plan to attend may have different requirements. Please consult your advisor before beginning your coursework.

Sample Plans of Study

OPTION 1 - Placement into Intermediate Algebra (MAT1033); Foreign Language and Chemistry completed in High School.

<table>
<thead>
<tr>
<th>FIRST YEAR</th>
<th>SEM. HOURS</th>
<th>SECOND YEAR</th>
<th>SEM. HOURS</th>
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<tr>
<td>***</td>
<td>1st Semester</td>
<td>***</td>
<td>1st Semester</td>
</tr>
<tr>
<td>SLS1127</td>
<td>Science Orientation</td>
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<td>MAC1114</td>
</tr>
<tr>
<td>ENC1101</td>
<td>College Composition</td>
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<td>CHM1046C</td>
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<tr>
<td>SLS1122</td>
<td>Managing Success</td>
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<td>ENC1102</td>
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<tr>
<td>MAT1033</td>
<td>Intermediate Algebra</td>
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<td>GLY2010C</td>
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<tr>
<td>BSC1010C</td>
<td>General Biology I</td>
<td>4.00</td>
<td>OCE1001L</td>
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<tr>
<td>***</td>
<td>2nd Semester</td>
<td>***</td>
<td>2nd Semester</td>
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<tr>
<td>MAC1105</td>
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<td>3.00</td>
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<tr>
<td>BSC1011C</td>
<td>General Biology II</td>
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<td>1 Humanities Core (AML/LIT)</td>
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<tr>
<td>CHM1045C</td>
<td>General C. Chemistry</td>
<td>4.00</td>
<td>1 Social Science Core (Column 1)</td>
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<tr>
<td>SPC2608</td>
<td>Oral Communication</td>
<td>3.00</td>
<td>STA2033</td>
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<tr>
<td>***</td>
<td>Summer Semester</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>1 Social Science Core</td>
<td>3.00</td>
<td></td>
<td>TOTAL ELECTIVES</td>
</tr>
<tr>
<td>HUM 2020*</td>
<td>Intro to Humanities</td>
<td>3.00</td>
<td>TOTAL CREDITS</td>
</tr>
</tbody>
</table>

*Track applies for FSU, UF, USF, however, they also require Calculus (MAC2311); FSU requires General Physics (PHY1053)

** Florida Gulf Coast University does not require CHM1046, but requires BSC1056.

***University of West Florida requires BOT1010, but does not require BSC1011.
Challenging our Students and Early Engagement in Career Practices

OCE1001 LAB

- Piloted in Fall, 2013
- Limited enrollment
  - Designed specifically for AA Transfer Students
  - 16 maximum
  - Permission required
- Field intensive
- Requires independent research project
  - Completed in one semester
Why is this Lab important?

“…student’s level of social integration…and intellectual self-confidence…is significantly and positively related to eventual degree completion.”
IMES and Undergraduate Research at a 2YC

**OCE1001 LAB**

- **Give our students experiences that would..**
  - Strengthen skills
  - Increase confidence
  - Prepare and make them more competitive for transfer
  - Help to identify academic and career goals
IMES and Undergraduate Research at a 2YC

OCE1001 LAB

- Gave me an opportunity to:
  - Interact closely with my students
  - Identify academically immature students
    - Early intervention
21-foot Jones Brothers
MENTOR PARTNERSHIPS

- NASA
- NOAA
- MDC
- MSC
- SJRWMD
IMES Undergraduate Research at DSC—OCE1001 Lab

Rigorous Field/Lab Experiences

Oxygen Comparison

- Surface
- Deep

Oxygen (mg/L)

Sample Site ID

Surface
Deep
DSC—we have a winner!!

Brent Meister
AA Marine Biology

Emily Reyes
AA Environmental Science

Robin Kelly
AS EST Program

Angela Boney
AA Environmental Science
IMES Student Persistence and Retention Strategy

A Brief Summary Thus Far...

√ 1. Providing a Sense of Belonging
   • Communication
     ○ IMES Facility
     ○ Re-building Education Plans
     ○ Social Media Pages

√ 2. Challenging our Students and Early Engagement in Career Practices
   • OCE1001 Lab
   • Courses Specific to Major

3. Interaction with Faculty
Interaction with Faculty (and peers!)

“...the past twenty years of research on undergraduates suggests that the most potent forms of positive involvement are with academics, faculty, and peers, and that degree completion, in particular, is negatively affected by noninvolvement.”
Providing a Sense of Belonging AND Interaction with Faculty and Peers!

SLS1127-a Pilot Course

- New required orientation—SLS1127
  - Meet cohorts, faculty, current students
  - Introduce college resources
  - Have fun!!
A brief overview

- Designed for students NOT wanting to obtain a B.S.
  - Also note student academic maturity
    - Need of challenge
- Contains program-specific courses that will NOT transfer to a 4-year institution
  - OCE2013/L
  - PCB2033/L
  - EVR2933 & EVR2943
STUDENT RECRUITMENT
Supporting and Advancing Geoscience Education in 2YCs

If you wanna be big—ya’ gotta think big!
STUDENT RECRUITMENT
Supporting and Advancing Geoscience Education in 2YCs

If you wanna be big—ya’ gotta think big!

Hellooooo Falcon!
The Gateway to Student Success Begins Here...
Our Message to the Frontline!!

What can YOU do to help student recruitment, persistence and retention??

- Tell them about IMES
  - Enroll them in an IMES major!
  - Show them the Webpage
  - Encourage them to visit/contact
  - SIGN THEM UP FOR THE LAB!!
- Help them identify the appropriate major
  - AA in Environmental Science or AS in Environmental Science Technology
Increasing Student Retention and Recruitment—

It’s going to take all of us working together

IMES can do it with your help!!