Student-Lead Data Collection at a Health and Fitness Symposium

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The Conception

- Participation in our annual Science Technology and Research Symposium (STaRS)
- STEM grants

Courses Involved

- **Spring 2015 EXSC 3101K – Exercise Physiology**
  - Section 01 – 24 Students
  - Section 02 – 10 Students
- **Fall 14 EXSC 4100K – Exercise Testing & Prescription**
  - Section 01 – 13 Students
- **Spring 15 EXSC 4100K – Exercise Testing & Prescription**
  - Section 01 – 19 Students
- **Spring 15 EXSC 4410 – General Medical Conditions**
  - Section 01 – 26 Students

Research Skills Addressed

- **EXSC 3101K EXSC – Exercise Physiology**
  - Reading and summarizing research articles
  - Data collection
  - Validity and reliability of testing procedures
- **4410 General Medical Conditions**
  - Data collection
- **EXSC 4100K – Exercise Testing & Prescription**
  - Overview of research principles
    - Experimental Design
    - Review of related literature
    - Research question and hypothesis
    - Validity and reliability of testing
    - Data collection

Changes to Courses

- **Fall EXSC 3101K – Exercise Physiology**
  - Research articles
  - Abstracts
  - Lab reports in research format
- **Spring EXSC 4100K – Exercise Testing & Prescription**
  - Research design
  - Reliability and validity
  - Testing
  - Committees
  - Practice sessions

Students Impacted

- Approximately **275 EXSC students** across the **3** years included at some level each year

Subjects

- **2015** – approximately **250** subjects
- **2014** – approximately **100** subjects
- **2013** – approximately **125** subjects

Grant - Funding

- AY 2012-2013 $2,467.50
- AY 2013-2014 $7,255.44
- AY 2014-2015 $7,327.00

Purchases

- Total Amount - $7,327
  - Equipment
  - Uniforms
  - Prizes
  - Testing supplies
  - Healthy food samples
  - Publicity

Procedures

- Participants completed the following tests:
  - **Body Composition**
    - WHR & BMI
  - **Circulation**:
    - Resting HR & BP
  - **Fitness Tests**:
    - Vertical Jump (Power)
    - Step Test (Aerobic Fitness)
    - Push-ups and Curl-ups (Muscular Endurance)
    - Dynamometry (Muscular Strength)
    - Sit and Reach, (Flexibility)
  - **Health Behaviors & Demographic Questionnaire**

Challenges & Successes

Challenges

- Reliability of testing
- Compiling data
- #FITTVPatGGC
- Adding prescriptions
- Inadequate equipment

Successes

- Videos https://www.youtube.com/watch?v=1nrH0wJou_U
- Well organized
- 250 participants
- Nutrition demos
- Including Nursing
- EXSC students impacted
- Obstacle course
- Student research presentations

Student Research Presentation

- Student research in STEC 4500 course
- Student presented the data at the STEC Symposium

Future Direction

- Larger population next year
  - Compare between schools and majors
- Expand testing and data collection
- Tighten controls
- Prescriptions
- Metabolic testing

Questions?

Significance

- Approximately **2%** of the U.S. population between the ages of 18 and 25 are in the Pre-Diabetic range.
  - **6.38%** of the students tested fell into the pre-diabetic range.

- The rate of diabetes for young adults between the ages of 18 and 25 is approximately **1%**.
  - **1.42%** of the students tested fell into the diabetic range.

Body Composition

Challenges

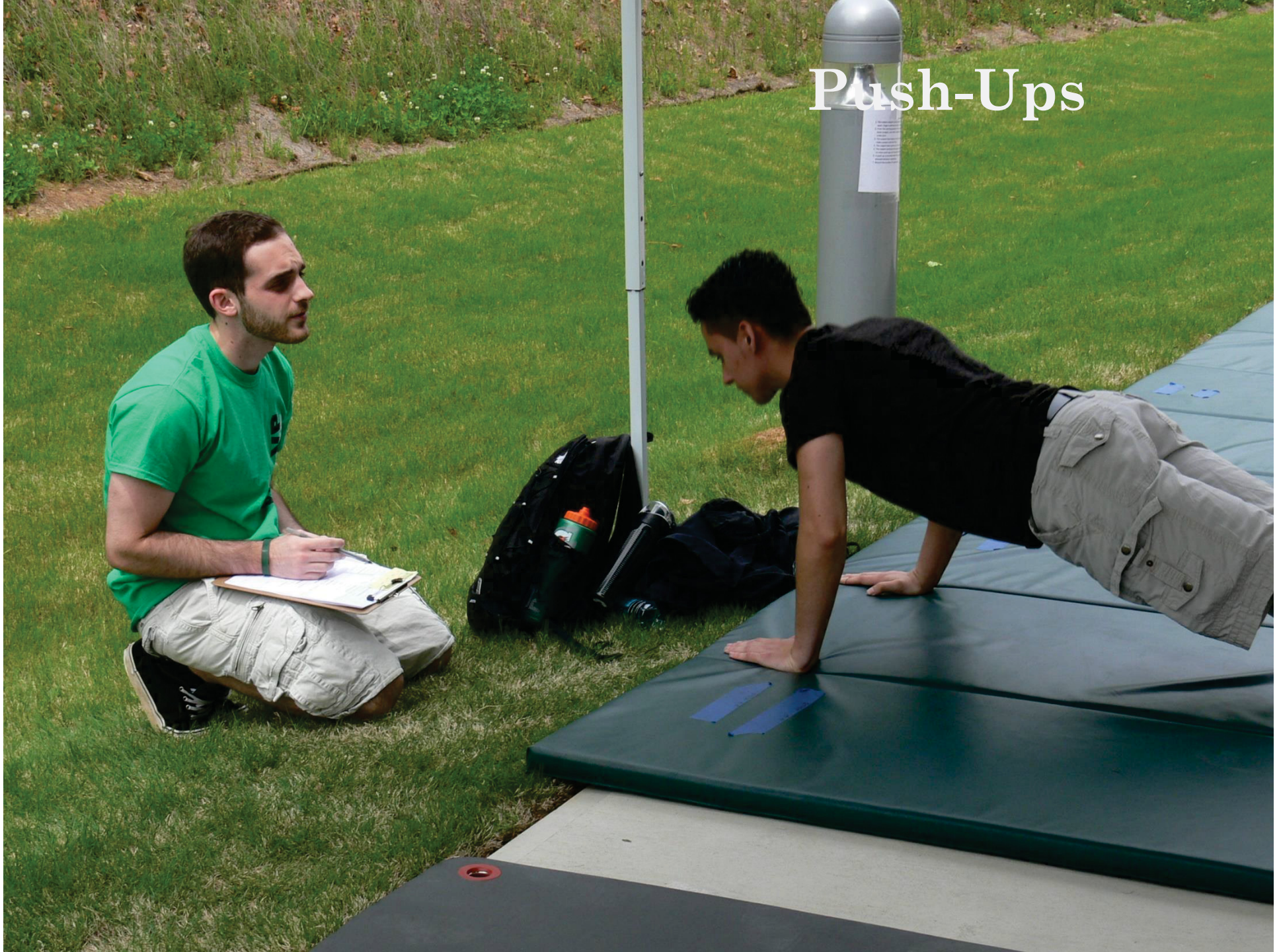
- Inadequate equipment
- Limited students
- Enlistment of additional EXSC students from other EXSC courses
- Validity and reliability of data collection
- Student led activity
- Reliability of testing
- Compiling data
- #FITTVPatGGC
- Adding prescriptions
- Pulling it all together

Vertical Jump

Queens Step Test

Curl-ups

Push-Ups



Sit & Reach

Year 3 of Grant - Funding

- AY 2012-2013 $4,467.50
- AY 2013-2014 $7,255.44
- AY 2014-2015 $7,327.00

Budget

- Total Amount - $7,327
  - Equipment
  - Uniforms
  - Prizes
  - Testing supplies
  - Healthy food samples
  - Publicity

Changes

- Better application of research principles
- More classes involved in the research
- Social media
  - Publicity
- Video advertising
- Demonstrations
  - Health food
  - Proper techniques
- Protein bar demos
- Prescriptions

Population

- Total Participants 250
- Sex
  - Males 50
  - Females 90
- Average Age 21.8
- Year in School
  - Freshman 35
  - Sophomore 33
  - Junior 24
  - Senior 8
- Major
  - Biology 31
  - Chemistry 8
  - Exercise Science 11
  - IT 13
  - Math 2
- Body Mass Index 24.77

Business	14
Criminal Justice	3
Early Childhood Ed.	1
English	1
Political Science	1
Sociology	20

Results of A1C test at STaRS

- Tested 141 students

Classification	Number	Percentage
Normal	130	92.9%
Pre-Diabetic	9	6.38%
Diabetes	2	1.42%