Karl-Dieter Crisman

Gordon College

Incorporating social justice projects into the college mathematics curriculum Joint Mathematics Meetings: January 12 2018, San Diego, CA



## What is Service-Learning?

A service-learning component is an educational activity which (cf. Charles Hadlock):



## What is Service-Learning?

A service-learning component is an educational activity which (cf. Charles Hadlock):

- Renders some kind of useful service to society (typically a non-profit)
- Provides a useful learning opportunity for the students involved, in close conjunction with the curriculum



# What is Service-Learning?

A service-learning component is an educational activity which (cf. Charles Hadlock):

- Renders some kind of useful service to society (typically a non-profit)
- Provides a useful learning opportunity for the students involved, in close conjunction with the curriculum

This can happen in many contexts, such as:

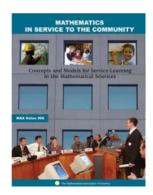
- Optional individual regular service
- Required group consulting project
- Additional course credit



#### Resources

There are relatively few places where multiple service-learning ideas for collegiate mathematics are put together in one place (though there are scattered references elsewhere: see handout).

- MAA book: "Mathematics in Service to the Community", ed. Hadlock.
- My website of curated links and many talks from 2011 Joint Meetings http://math.gordon.edu/ ~kcrisman/ServiceLearning/
- PRIMUS special issue





#### Examples

#### Snapshots

- Tutoring math
- Analyzing fundraising for local nonprofits
- Redesigning food pantry (several places!)
- Deepwater Horizon spill area and effects on fauna, tourism, seafood . . .



#### **Examples**

#### Snapshots

- Tutoring math
- Analyzing fundraising for local nonprofits
- Redesigning food pantry (several places!)
- Deepwater Horizon spill area and effects on fauna, tourism, seafood . . .
- Tutoring math



#### **Examples**

#### Snapshots

- Tutoring math
- Analyzing fundraising for local nonprofits
- Redesigning food pantry (several places!)
- Deepwater Horizon spill area and effects on fauna, tourism, seafood . . .
- Tutoring math

How to do it? See proper resources for real guidelines!

E.g. https://slmath.com/about/



## Service-Learning in Math?

Hadlock: "Unfortunately, the mathematical sciences are sometimes perceived as having a more difficult task to incorporate service activities in the curriculum."



## Service-Learning in Math?

Hadlock: "Unfortunately, the mathematical sciences are sometimes perceived as having a more difficult task to incorporate service activities in the curriculum."

• Anon. Math Prof.: "I can think of no service projects in the community that will enhance student learning of the abstract reasoning skills they should be learning in mathematics."



## Service-Learning in Math?

Hadlock: "Unfortunately, the mathematical sciences are sometimes perceived as having a more difficult task to incorporate service activities in the curriculum."

 Anon. Math Prof.: "I can think of no service projects in the community that will enhance student learning of the abstract reasoning skills they should be learning in mathematics."

You'll need to think about this, even with tutoring – what is *curricular* goal?



Connection to social justice or 'increas[ing] a student's understanding of economic, social, healthcare, etc. differences between groups of people' may be oblique.



Connection to social justice or 'increas[ing] a student's understanding of economic, social, healthcare, etc. differences between groups of people' may be oblique.

Examples of good service-learning which *could* be about differences in populations:

- Action plan of false alarm data for a diverse community
- Doing statistics and survey research for local service-oriented non-profit to identify needs



Connection to social justice or 'increas[ing] a student's understanding of economic, social, healthcare, etc. differences between groups of people' may be oblique.

Examples of good service-learning which *could* be about differences in populations:

- Action plan of false alarm data for a diverse community
- Doing statistics and survey research for local service-oriented non-profit to identify needs

Service goals may not be same as justice goals. My first project:



Connection to social justice or 'increas[ing] a student's understanding of economic, social, healthcare, etc. differences between groups of people' may be oblique.

Examples of good service-learning which *could* be about differences in populations:

- Action plan of false alarm data for a diverse community
- Doing statistics and survey research for local service-oriented non-profit to identify needs

Service goals may not be same as justice goals. My first project:

- Student A: 'Tutoring Lizette has also helped me to widen my view of the world.'
- Student B: 'American public school is free [so] the education is taken for granted regardless of socio-economic status.'



Connection to social justice or 'increas[ing] a student's understanding of economic, social, healthcare, etc. differences between groups of people' may be oblique.

Examples of good service-learning which *could* be about differences in populations:

- Action plan of false alarm data for a diverse community
- Doing statistics and survey research for local service-oriented non-profit to identify needs

Service goals may not be same as justice goals. My first project:

- Student A: 'Tutoring Lizette has also helped me to widen my view of the world.'
- Student B: 'American public school is free [so] the education is taken for granted regardless of socio-economic status.'

SL and SJ can intersect beautifully, but it takes forethought.



My biggest advice?



My biggest advice?

Invest deeply in the relationship with the community partner.



My biggest advice?

Invest deeply in the relationship with the community partner.

The worst surprises happen because of inadequate preparation or communication with regard to your mutual goals and needs.



My biggest advice?

Invest deeply in the relationship with the community partner.

The worst surprises happen because of inadequate preparation or communication with regard to your mutual goals and needs.

Take a couple minutes to discuss one of the scenarios on handout; pick 1 if odd number of people at table, 2 if even.



My biggest advice?

Invest deeply in the relationship with the community partner.

The worst surprises happen because of inadequate preparation or communication with regard to your mutual goals and needs.

Take a couple minutes to discuss one of the scenarios on handout; pick 1 if odd number of people at table, 2 if even.

(The scenarios are intentionally vague because challenges may not be the ones we expected.)