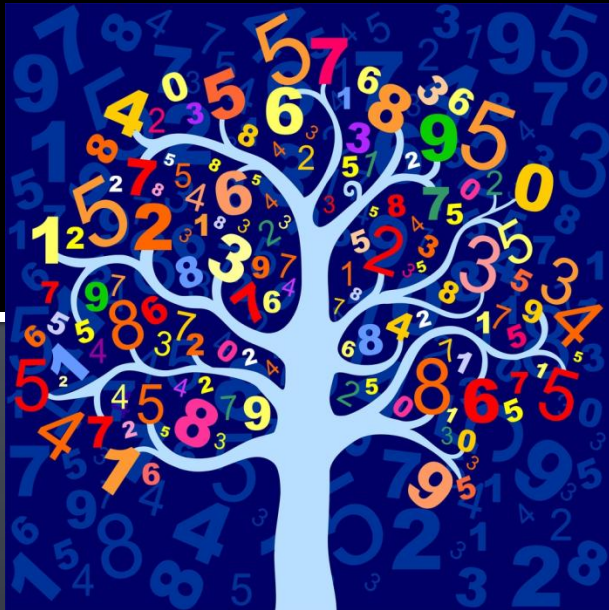


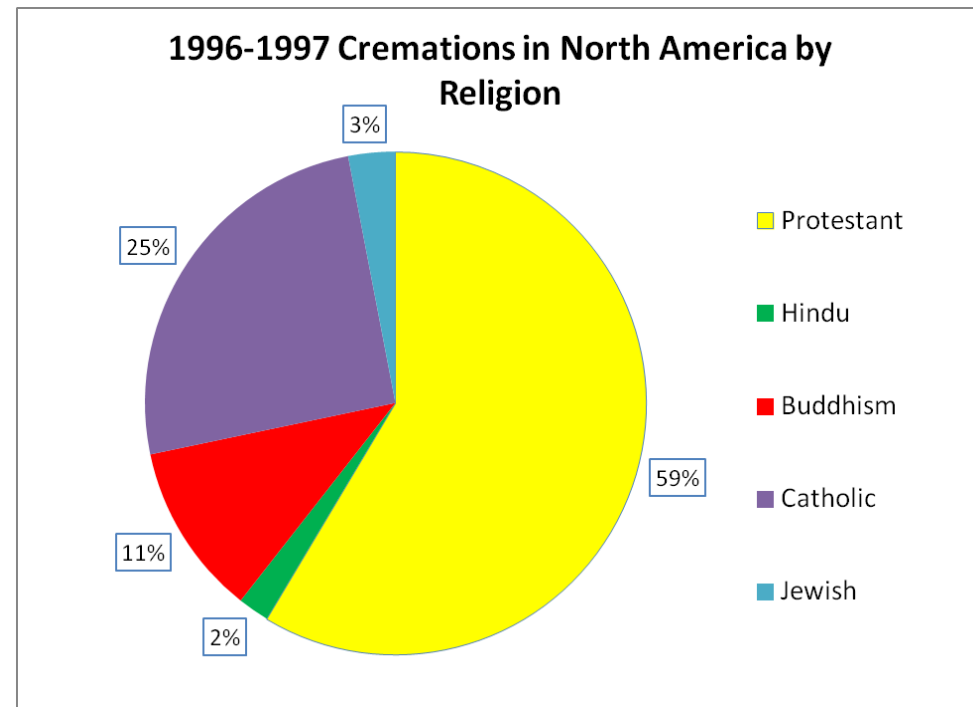
# A Numeracy Infusion Course for Higher Education (NICHE)



Esther Isabelle Wilder, Lehman College, CUNY  
Frank Wang, LaGuardia Community College, CUNY  
Dene Hurley, Lehman College, CUNY  
Elin Waring, Lehman College, CUNY

# Based on the chart below, which of the following is true?

1. Jews are slightly more likely to get cremated than Hindus.
2. Protestants are the religious group most likely to get cremated.
3. 3% of Jews chose to get cremated.
4. All of the above.
5. None of the above.



# Approaches to QR Instruction

- MAA (1998) reports that colleges must:
  - treat QL as a necessary goal for graduates,
  - expect every graduate to apply simple mathematical methods to the solution of real-world problems,
  - devise and establish QL programs that consist of a foundation experience as well as a continuation experience, and
  - accept responsibility for overseeing their QL programs through regular assessments.

Research emphasizes the need to infuse QR throughout the curriculum.

# The Setting: The City University of New York

- 59% of CUNY students are female.
- 57% are black, Hispanic, or American Indian/Native American.
- Nearly 30% are 25 or older.
- 54% have household incomes of less than \$30,000.
- 44% are first-generation students.
- Many have weak quantitative skills and high levels of math phobia.

# The CUNY QR Alliance

- Brings together together faculty from a wide range of CUNY schools.
- Teaches faculty best practices for responding to the QL needs of CUNY students.
- Gained the support of the National Science Foundation in the fall of 2011 (TUES #1121844).
- Builds upon a QR initiative at Lehman College/CUNY.



# Motives for Faculty Participation in the Lehman QR Workshop

- In both years, 100% of participants indicated that an “interest in [the] workshop topic” was a *very important* reason for their participation.
- 100% pointed to a “concern for students.”
- Faculty networking, a “convenient time,” and financial incentives were also identified as important.

# The Lehman QR Program and the Changing Attitudes of Faculty Participants

- First session: 60% of faculty agreed that they had a “good understanding of what Quantitative Reasoning is.”  
End of workshop: 100% agreed.
- September 2011, 80% of participants felt “confident in [their] Quantitative Reasoning skills.”  
End of the year: 100% felt confident.
- From the first session to the last, the percentage of faculty who “place a heavy emphasis on QR in [their] course instruction” rose from 40% to 80%.

# Teaching QR: Voices of the Lehman College Faculty

- Pedagogical strategies emphasized as most important for teaching QR:
  - active engagement in data analysis,
  - pairing QR with writing and/or critical reading,
  - the revision of QR assignments,
  - the assessment of QR learning, and
  - the use of computer software such as Excel.

These are the same strategies that faculty plan to use in their teaching.

Written comments show strong emphasis on assessment and infusion throughout the curriculum.

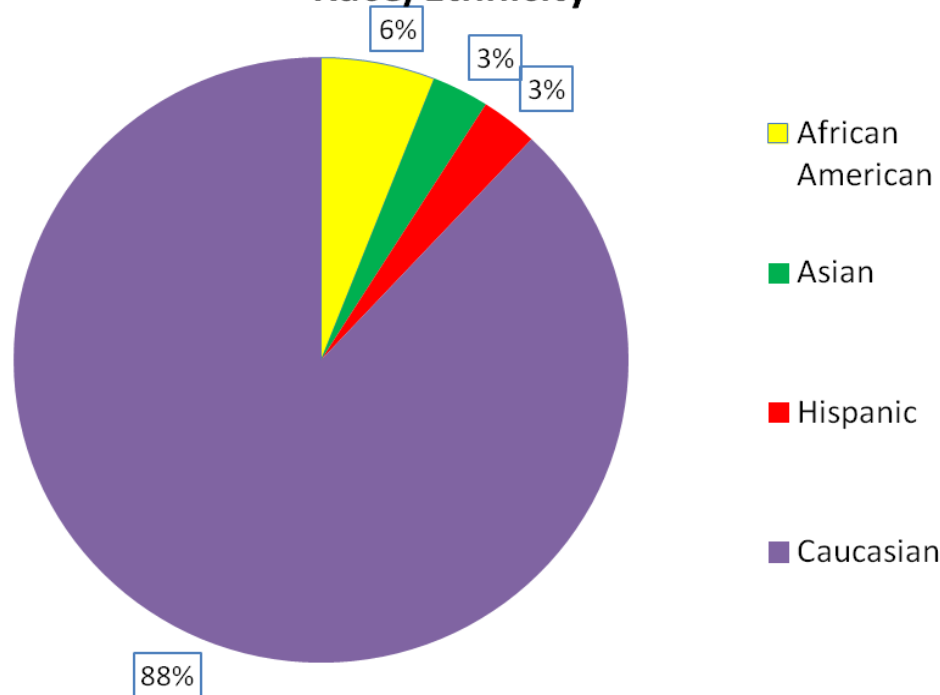


# Teaching QR: Voices of the Lehman College Faculty

Most important elements of QR instruction:

- wide and multidisciplinary QR participation
- the blending of QR instruction and writing instruction
- a screening test that assesses students' QR skills
- a QR tutoring center
- regular assessment of student learning
- a standard set of QR learning objectives
- a foundational QR course.

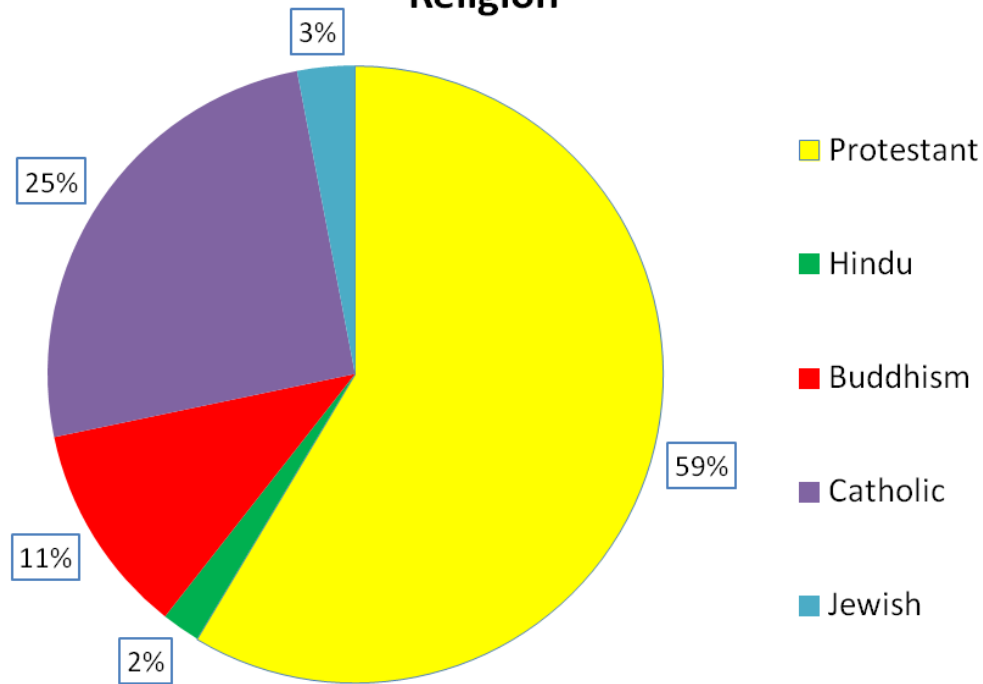
### 1996-1997 Cremations in North America by Race/Ethnicity



2011-2012  
QR Workshop

- *Based on the chart, which of the following is true?*
- African Americans were twice as likely to be cremated than Asians (n=0; 0%)
- Asians and Hispanics were equally likely to be cremated? (n=0; 0%)
- **On average, 3 of every 100 cremations were among Hispanics. (n=5; 50%)**
- Both (a) and (b) (n=0; 0%)
- All of the above (n=5; 50%)

1996-1997 Cremations in North America by Religion



2011-2012  
and 2012-  
2013  
QR  
Workshops

- *Based on the chart, which of the following is true?*
- Jews are slightly more likely to get cremated than Hindus. (n=0; 0%)(n=0; 0%)
- Protestants are the religious group most likely to get cremated. (n=2; 20%)(n=4; 29%)
- 3% of Jews chose to get cremated. (n=1; 10%)(n=1; 7%)
- All of the above (n=0; 0%)(n=4; 29%)
- **None of the above (n=7; 70%)(n=5; 36%)**

# Would you count, dollar by dollar, in exchange for all of Bill Gates' money (61 billion dollars)?

64%

1. No

29%

2. Yes

7%

3. Not sure



# The Future of the NICHE Project

- Key Learning Outcomes:
  - apply QL/QR within a disciplinary context;
  - articulate QR learning goals that reflect best practices;
  - identify and implement best practices for teaching QR: active learning, collaborative student learning, writing with numerical information, etc.;
  - adapt and implement strategies for incorporating QR into course instruction; and
  - assess the effectiveness of QR initiatives and use the results to improve instruction.

NICHE

Search the Site

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Students' Quantitative Reasoning Skills
Quantitative Reasoning Learning Goals
Quantitative Reasoning Across the Curriculum
Best Practices for Quantitative Reasoning Instruction
Assessing Quantitative Reasoning
Materials for NICHE

# Numeracy Infusion Course for Higher Education (NICHE): A Project of the City University of New York (CUNY) Quantitative Reasoning Alliance

## What is CUNY NICHE?

The Numeracy Infusion Course for Higher Education (NICHE) is a project of the City University of New York (CUNY) Quantitative Reasoning (QR) Alliance that fosters the infusion of QR instruction and assessment into undergraduate courses in a broad range of disciplines. NICHE is a predominantly online course that teaches faculty how to (a) apply Quantitative Literacy/Quantitative Reasoning (QL/QR) within a disciplinary context, (b) articulate QR learning goals/objectives that reflect best practices for teaching quantitative literacy, (c) identify and implement best practices for teaching QR: active learning, collaborative student learning, writing with numerical information, etc., (d) adapt and implement strategies for incorporating quantitative reasoning into course instruction, and (e) assess the effectiveness of QR initiatives and use the assessment results to further improve instruction.

The materials presented on this web site serve as a complement to a series of interactive modules that are included in Blackboard that provide instruction to faculty for strategies for teaching QR to students.



## The CUNY NICHE QR Alliance

- Prabha Betne, Faculty Liaison, LaGuardia Community College (pbetne@lagcc.cuny.edu)
- Laura Broughton, Faculty Liaison, Bronx Community College (laura.broughton@bcc.cuny.edu)
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- Judith Duncker, Research Consultant, Lehman College (judith.duncker@lehman.cuny.edu)

^ NICHE: Numeracy Infusion Course for Higher Education >>

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- Information
- Content
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ORGANIZATION MANAGEMENT

- ^ Control Panel
- Files
- Organization Tools
- Evaluation
- Grade Center
- Users and Groups
- Customization
- Packages and Utilities
- Help

Content

- Build Content
- Create Assessment
- Add Interactive Tool
- Assign Textbook

- Unit 1: Welcome, Defining QR and Number Sense
- Unit 2: QR Learning Objectives
- Unit 3: The Brain, Cognition and QR
- Unit 4: Working with and Writing about Data
- Unit 5: Constructivist Approaches and Discovery Methods
- Unit 6: Using Graphing and Spreadsheets to Teach QR
- Unit 7: QR Assessment
- Unit 8: Inequality, Assumptions about Numeracy, and Ethnomathematics
- Unit 9: Bringing Everything Together

Please visit us at our NICHE web site,  
<https://serc.carleton.edu/NICHE/>

**Thank you!**

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