

PEDAGOGICAL FORAY: INTRODUCING A SPEAKER

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The extracts in this foray consist of the opening remarks in the “Public Math Colloquium” (COL385MU054) from the MICASE Physical Sciences and Engineering Division. In the USA a *colloquium* typically indicates an invited talk of some kind, with the audience consisting mainly of students and faculty members—this one was attended by about 100. And in this case, there are two introductions!

TASK 1. Listen to the first, following along in the transcript. Listen again and then answer the questions that follow.

[Click here to listen](#)

S1: this lecture uh, we are very pleased that the Undergraduate Mathematics Society, has uh sponsored uh this lecture uh to uh, uh explain about the solution of what is perhaps the, oldest unsolved problem in mathematics, and uh i want to remind everyone that there is a reception following the, lecture in the mathematics atrium which is uh in the south atrium in uh, this building <SS LAUGH> that way and up one left, so i'd like to introduce to you uh Polly McMahon the President of the Undergraduate Mathematics Society who will introduce our colleague Tom Hales.

- A. Name of the person who will deliver the lecture: _____
- B. Name of the person who will introduce the lecturer: _____
- C. Why is she given a prominent role? _____
- D. The first speaker does not introduce himself. Who do you think he is? _____
- E. Apart from introducing the undergraduate, the speaker does three other things. The first two are listed. What is the third?
 - 1. announce the sponsorship
 - 2. indicate that the topic will be fascinating
 - 3. _____

Finally, we need to pay attention to the language. Immediately, we can note that speaker gets off to a “false start.” He says “this lecture, uh” but then starts again with “we are very pleased...” This suggests that he hasn’t a prepared script but is speaking *impromptu* or from notes.

- F. What other evidence of informality can you detect? _____

On the other hand, the speaker is not totally informal; we can notice formal phrases like “we are very pleased that the Undergraduate Mathematics Society...” as opposed to “I’m sure glad the undergrad math society...”

- G. Can you find a couple of others? _____

TASK 2. The second speaker now begins her introduction by quoting <READING> the titles of several articles referring to the mathematical proof he discovered and which will be the main subject of his keynote lecture. Listen to this second introduction as you follow along in the transcript. Listen again and then answer the questions.

[Click here to listen](#)

S2: a few articles published in the last few months, <READING>packing challenge mastered at last. U-of-M professor solves four-hundred-year-old math riddle. mathematics proves what the grocer always knew. Kepler's orange stacking problem squashed. mathematician proves that shops know how to stack fruit. Hales solves the oldest problem in discrete geometry.</READING> who would have thought that a mathematical proof could receive so much media coverage? well the coverage may be unusual but it's far from undeserved.

- A. What does the undergrad mean by “articles” here? _____
- B. Maybe we can infer some information from these titles: is there any recurring metaphor or class of words describing what the mathematical proof might be about? _____

Let’s find out something more about “Kepler’s conjecture” which is basically the answer to the following question: “*What arrangement of equal spheres takes up the least space?*” Visit the webpage below:



Kepler experimented with the problem and concluded that an arrangement known as the *face centred cubic* packing, **a pattern favoured by fruit sellers, could not be bettered**. This statement has become known as “Kepler’s conjecture” or simply the sphere **packing problem**.

Retrieved August 2004 from: <http://www.math.pitt.edu/~thales/kepler98/>

- C. Can you now explain the general meaning of the following headlines? Can you find a pun (a play on words) in the last one?
1. *mathematics proves what the grocer always knew*
 2. *mathematician proves that shops know how to stack fruit*
 3. *Kepler's orange stacking problem squashed*
- D. In two of the articles the same piece of news is given a different treatment—more accurate and objective. Since a mathematical proof does not usually “receive so much media coverage”, which particular aspect of this mathematical finding has attracted the media’s attention in this case?
1. *U-of-M professor solves four-hundred-year-old math riddle*
 2. *Hales solves the oldest problem in discrete geometry.*

Go to the following webpage and find information about a similar type of challenge: the “Millennium Problems”, or the seven classical unresolved mathematical problems.

<http://www.claymath.org/millennium/>

[Leicher & Swales](#) (2003) have put forward a variety of reasons for speakers referring to this type of media coverage or outside sources: “for analysis, to enliven the

discussion, to relate the academic world to the real world, to exert their authority or undermine other's, or to display their own knowledge.”

E. What is, in your opinion, the reason for this second speaker to introduce all these references? _____

TASK 3. Since this is a formal presentation, the second speaker provides an accurate report of Prof. Hales’ career so far. Can you complete the blank spaces below with the information given? What would be the equivalent degree and academic rank in your country?

[Click here to listen](#)

S2: an expert in representation theory, analysis, algebra and physics, Dr Hales received his _____ and _____ degrees at _____ in nineteen _____. his _____ at _____ in _____ under the Harold W Dodds Honorific Fellowship, he then went on to the _____ to do _____ research. and then to _____, where he was an _____ for two years under the National Science Foundation Fellowship. he completed the _____ at the _____ in the following year. he was an _____ at the _____ from _____ to _____. in _____ he came to the _____ as an _____. here he's a member of the _____, and chair of the _____. he has won the College of Literature Science and the Arts _____ Award and the _____ Award for _____.

| YEAR | PLACE | ACADEMIC RANK | EQUIVALENT |
|-------|------------------------------|---|------------|
| 1982 | _____ | Undergraduate, BS, or bachelor's degree; graduate, MS, or master's degree | |
| _____ | Princeton | | |
| | Math Sciences Research Inst. | | |
| 1989 | _____ | | |
| _____ | Institute for Advanced Study | | |
| _____ | _____ | Assistant Professor | |
| _____ | Michigan | | |
| _____ | _____ | Member of... Chair of... Winner of...(1) (2) | |

TASK 4. Strictly speaking, Prof. Hales has just found the proof of a problem that “grocers always knew” and “that seems simple at first glance.” Therefore, the speaker feels it necessary to transmit to the audience the enormous difficulty inherent in his finding. First, listen to how she goes about it. Then listen again as you read along, and try to answer the question.

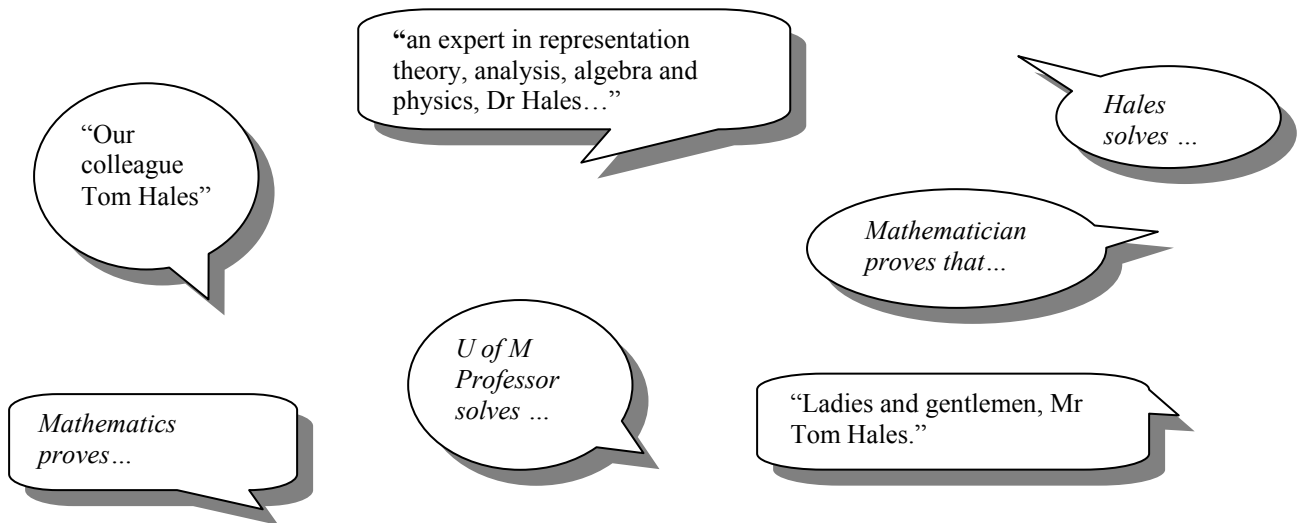
[Click here to listen](#)

S2: he's (*Prof. Hales*) here today with the proof of a problem that has stumped mathematics for four hundred years. a problem that seems simple at first glance. examined more closely, one can see that a proof of such a problem, actually involves over five hundred possible spher- over five thousand possible spherical configurations. thousands of crucial details. two hundred and fifty pages of formal proof. one hundred and fifty variables, combined into one equation. ten years of work. <SS LAUGH> a five-step strategy. three gigabytes of computer memory. a talented, graduate student assistant. and one brilliant associate professor. ladies and gentlemen, Mr Tom Hales

A. She uses something as scientific, accurate and objective as numbers. Basically, there are two types of numerical justifications of his feat. Can you describe them?

1. _____
2. _____

TASK 5. Throughout the different parts of this twofold introduction, the main speaker is referred to in a variety of ways. In fact, he is not referred to in the same way twice! Why do you suppose this is? (*Italics indicate written references.*) _____



TASK 6. Questions for discussion

1. What is your overall impression of these two introductions? Are they more or less formal than you would expect?
2. Do you have similar events at your institution? Compare and contrast.

3. Now that you have heard these two introductions from a colloquium at an American university, read or listen to a couple more and compare. Which do you prefer and why? Here is a list from which to choose:

- **Provost Public Lecture:** COL999MX036 (70 in audience.)
[Listen](#) [View transcript](#)
- **Women's Studies Guest Lecture:** COL605MX039 (200 in audience)
 1. Introduction of the benefactor of the lecture series
[Listen](#) [View transcript](#)
 2. Introduction of the main speaker
[Listen](#) [View transcript](#)
- **Problem Solving Colloquium:** COL999MX059 (15 in audience)
[Listen](#) [View transcript](#)

TEACHER NOTES

TASK 1.

- A. Name of the person who will deliver the lecture: **Tom Hales**
- B. Name of the person who will introduce the lecturer: **Polly McMahon**
- C. Why is she given a prominent role? **She is the President of the Undergraduate Mathematics Society... the organization which sponsors this lecture.**
- D. **First speaker is chair of the math department, a faculty member**
- E. **Invite the audience to the reception.**
- F. **Other evidence of informality: filler pauses (uh), informal way of giving directions to the atrium (“that way and up one left”), and conversational features such as “so....”**
- G. **Formal register “perhaps,” “I’d like to introduce you to...”; not many contractions (only 1); fully pronounced word endings (no elisions).**

TASK 2.

- A. **Informal (media, headlines). Less formal print media, intended for lay audience: newspapers, magazines, internet? (not professional journals)**
- B. ***packing, grocer, orange, stacking, squashed, shops, fruit.***

By visiting the webpage, students become aware of the existence of different degrees of formality either in the headlines or in the scientific literature :

The sphere packing problem
Stacking
Mathematics

Kepler’s conjecture
Arrangement
Discrete geometry

- C. **Several of the headlines hint at the superiority of logic and practical knowledge over theoretical and abstract approaches. Pun: *orange (problem) squashed / problem (about stacking oranges) solved.***
- D. **These two headlines underline the significance of the findings by referring to the number of years the problem has remained unsolved.**

Webpage synopsis:

The Clay Mathematics Institute of Cambridge, Massachusetts (CMI) has named seven *Prize Problems*. The Scientific Advisory Board of CMI selected these problems, focusing on **important classic questions that have resisted solution over the years**. The Board of Directors of CMI designated a **\$7 million prize fund for the solution to these problems**, with \$1 million allocated to each.
Retrieved August 2004 from: <http://www.claymath.org/millennium/>

There are further references in this colloquium to Prof. Andrew Wiles and his making headlines by solving “the most famous problem in the history of Mathematics”: Fermat’s Last Theorem. Kepler’s sphere packing problem is described by Prof. Hales as “a worthy sucesor” for this notorious challenge, thereby underlining its significance.

E. Basically the speaker tries to “relate the real world to the academic world” and underline the “unusual” presence of this type of event in the media. In this way she can both emphasize the importance of Prof. Hales’ discovery and provide a general introduction to the subject before proceeding to a more specific position.

Undoubtedly, these references also enliven the discussion—they’re colorful and stimulating and everyone can talk about commonsensical things.

TASK 3.

Full transcript:

S2: an expert in representation theory, analysis, algebra and physics, Dr Hales received his M-S and B-S degrees at Stanford in nineteen eighty-two. his PhD at Princeton in eighty-six under the Harold W Dodds Honorific Fellowship, he then went on to the Mathematical Sciences Research Institute to do post-doctoral research. and then to Harvard, where he was an assistant professor for two years under the National Science Foundation Fellowship. he completed the post-doctoral research fellowship at the Institute for Advanced Study in the following year. he was an assistant professor at the University of Chicago from nineteen ninety to nineteen ninety-three. in ninety-three he came to the University of Michigan as an associate professor. here he's a member of the math department Executive Committee, and chair of the Undergraduate Scholarship Committee. he has won the College of Literature Science and the Arts Excellence In Education Award and the Henry Russell Award for nineteen ninety-nine.

| | | |
|----------------|--------------------------|---|
| 1982 | Stanford | MS, master’s degree, graduate student; BS, bachelor’s degree, undergraduate |
| 1986 | Princeton | PhD |
| | Math Sci Res Inst | Post-doctoral research |
| 1987-8 | Harvard | Assistant Professor |
| 1989 | Inst. Adv. Study | Post-doctoral research fellowship |
| 1990-93 | Chicago | Assistant Professor |
| 1993 | Michigan | Associate Professor |
| 1999 | Michigan | Member Math Dept Exec Cmte/Chair of the Undergraduate Scholarship Committee/Winner of Excellence in Education Award and the Henry Russell Award. |

TASK 4.

- 1) Problem unresolved “for four hundred years” (**chronology**)
- 2) involves... over five thousand, thousands of... two hundred and fifty...ten years... (huge amounts of **time, resources, equipment, manpower** devoted to finding the proof)

TASK 5.

Students might suggest it relates to level of formality or level of generality, but we think it's really just for variety's sake. A similar abundance of terms to refer to the word "problem" (e.g. challenge, riddle, mathematical proof, conjecture) seems to confirm this idea.

N.B. A search in the *University of Michigan Online Directory* showed that the "official" name of this professor of the LS&A Mathematics Department is **Thomas C. Hales**.

TASK 6.

Don't limit the discussion to level of formality alone. You could discuss deference, respect, length, detail, audience, and any number of other factors.

The three suggested events:

- Provost Public Lecture: COL999MX036 (70 in audience).
This introduction is quite lengthy and formal. The provost talks about the challenges that face faculty, students, and staff at the University of Michigan, and some of the issues that she faces as provost.
- Women's Studies Guest Lecture: COL605MX039 (200 in audience).
There are four introductions in this event, but we present only two:
 1. The daughter of the benefactor of the lecture series introduces the benefactor, her mother.
 2. The speaker introduces herself (very briefly) before introducing the main speaker.

In the first introduction (not included here), the speaker introduces the event, herself, and the benefactor's daughter. The second introduction is number 1 above. In the third introduction (not included), the benefactor introduces her sister and niece (in the audience) and the topic of the lecture. The fourth introduction is number 2 above. And then...the main speaker introduces her speech!
- Problem Solving Colloquium: COL999MX059 (15 in audience). There is a short introduction of the main speaker. The introducer and main speaker are obviously friends.

R. C. Simpson, S. L. Briggs, J. Ovens, and J. M. Swales. (2002) *The Michigan Corpus of Academic Spoken English*. Ann Arbor, MI: The Regents of the University of Michigan