



NSE Communication Lab

Communication support for scientists, by scientists

NSE

Nuclear Science
and Engineering

COMMUNICATION LAB

Marina Dang

Lab Manager

Cast Stainless Steel Aging in LWRB/Materials Aging and Degradation

Increased service loads to increase availability

Types of degradation:

Phase

Timeline

Location

Reliability issues by 2020, 20 years of service
may require a different type and variety of stress
tests of degradation.

How much analysis of material degradation is
needed?

Develop the scientific basis for understanding and
predicting long-term environmental degradation
behavior of materials in nuclear reactor core.

Develop data and methods to assess the
performance of systems, structures, and
components external to tube and cladding from
operating.

Develop methods to detect and characterize aging
degradation processes.

Develop technologies for mitigation of any forms of
degradation.

Cast Austenitic Stainless Steel (CASS) Aging

- 1) Durability concerns production, massive components but with uncertainty in performance for extended operation.
- 2) Evaluate LWR relevant aging mechanisms: Aging in LWR versus accelerated aging
- 3) Evaluate aging degradation with more direct fracture data: Impact and static fracture toughness tests to be the most mechanical property evaluation.
- 4) Fracture fracture mechanisms in aged CASS: Includes chemistry change at interface during elevated temperature fracture
- 5) Confirmed & directed by examination

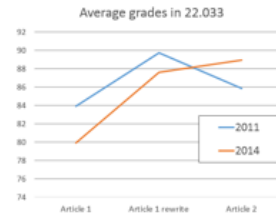
Activity: Explore the possibilities

Please, identify differences between slide versions 1 and 2. What do you like? What do you not like?

Version 1

Impact of the NSE Communication Lab

- 22,033 students submitted two journal articles, and one rewrite.
- There was no Comm Lab in 2011.
- Rewrites alone do not teach communication skills.
- In 2014, students were required to visit the Comm Lab for their rewrite assignment
- **With the Comm Lab, average grades increased by 9% between the first and second writing assignments.**
- **The grades continued to improve even without visiting the Comm Lab.**



Source: Professor Michael Short, 22.033/33 instructor

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2 Sep 2016 - NSE Graduate Student Orientation
Marina Dang

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Marina Dang | dangm@mit.edu | 24-216D
NSE Communication Lab manager

Version 2

The NSE Communication Lab strives to impart transferrable skills.



Sample size: 8 students

M. Short | 22.033/33 Fall 2014 instructor

Rewrites help improve the document; the Lab helps to improve the writer.

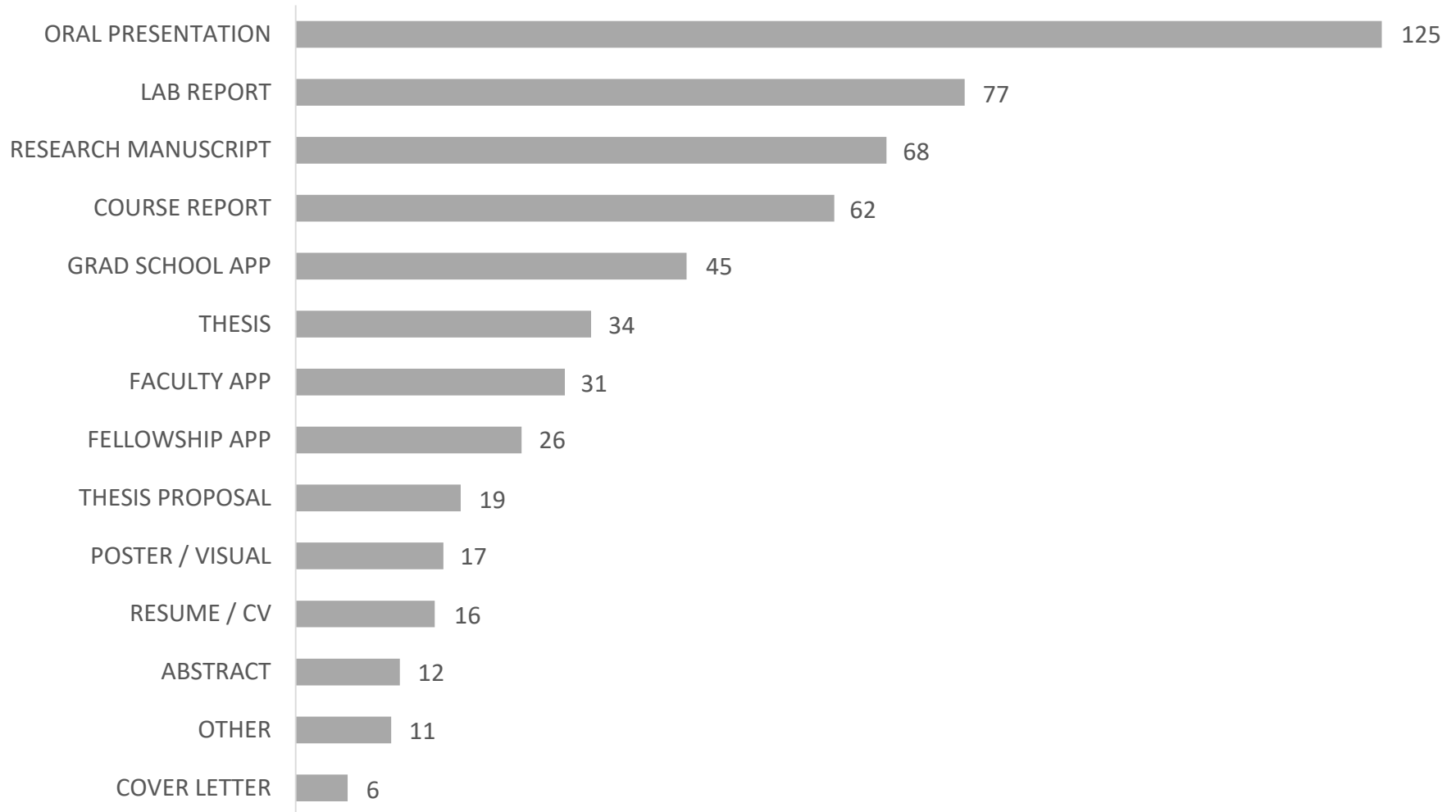


M. Short | 22.033/33 instructor

The NSE Communication Lab team

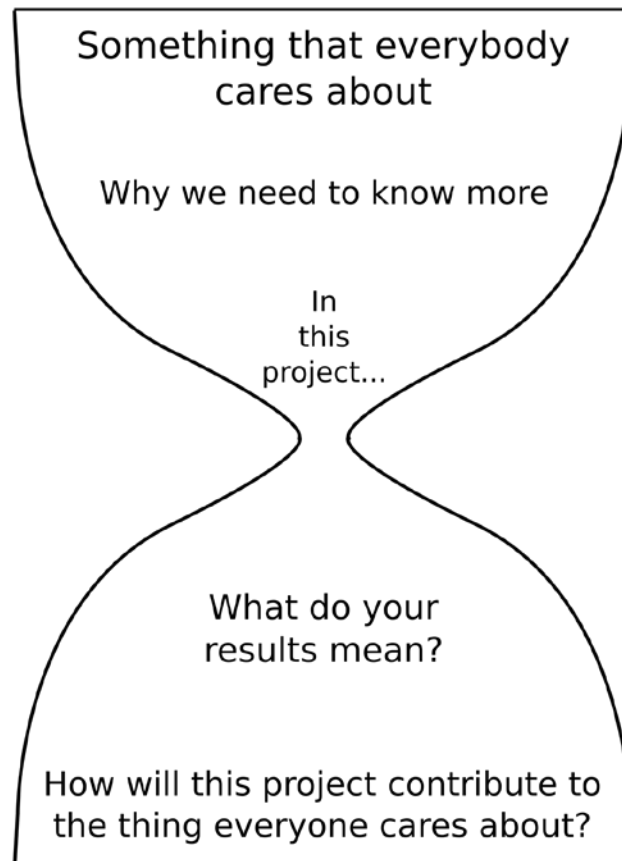


We've hosted nearly 550 coaching sessions.



Total appointments: 549

An effective abstract
is an hour-glass shaped message.



An effective abstract

Effective communication in engineering fields has been recognized as a crucial tool for success. In fact, NSE alumni who responded to an MIT survey reported that communication skills were more important in their careers than technical and analytical skills. However, the survey also revealed that while MIT had prepared its students well to solve complex problems, their training in communication had been insufficient. Here we describe the impact of a communication resource “for scientists by scientists” launched by NSE to fill this educational gap. As a peer coaching program, the Communication Lab is designed to help students and post-docs with their writing, speaking, and visual design needs, including oral presentations, coursework, and theses. Over the last three years, NSE graduate students trained as Communication Fellows hosted 249 coaching appointments to 179 individual students and postdocs. According to a 2017 survey, 79% of Lab users felt that the NSE Communication Lab had helped them acquire the communication skills they need to be successful at MIT. The Communication Lab model highlights the importance of a coach’s familiarity with the technical content, and offers a new alternative to traditional communication resources where the coach is primarily a trained writing professional.

General background

Specific background

Statement of problem or knowledge gap

“Here we show / report ...”
(a 1-sentence summary)

Detailed summary
of high-level results

Implications

An effective abstract

Effective communication in engineering fields has been recognized as a crucial tool for success. In fact, NSE alumni who responded to an MIT survey reported that communication skills were more important in their careers than technical and analytical skills. However, the survey also revealed that while MIT had prepared its students well to solve complex problems, their training in communication had been insufficient. Here we describe the impact of a communication resource “for scientists by scientists” launched by NSE to fill this educational gap. As a peer coaching program, the Communication Lab is designed to help students and post-docs with their writing, speaking, and visual design needs, including oral presentations, coursework, and theses. Over the last three years, NSE graduate students trained as Communication Fellows hosted 249 coaching appointments to 179 individual students and postdocs. According to a 2017 survey, 79% of Lab users felt that the NSE Communication Lab had helped them acquire the communication skills they need to be successful at MIT. The Communication Lab model highlights the importance of a coach’s familiarity with the technical content, and offers a new alternative to traditional communication resources where the coach is primarily a trained writing professional.

Access our resources online and in person.



CommKit online

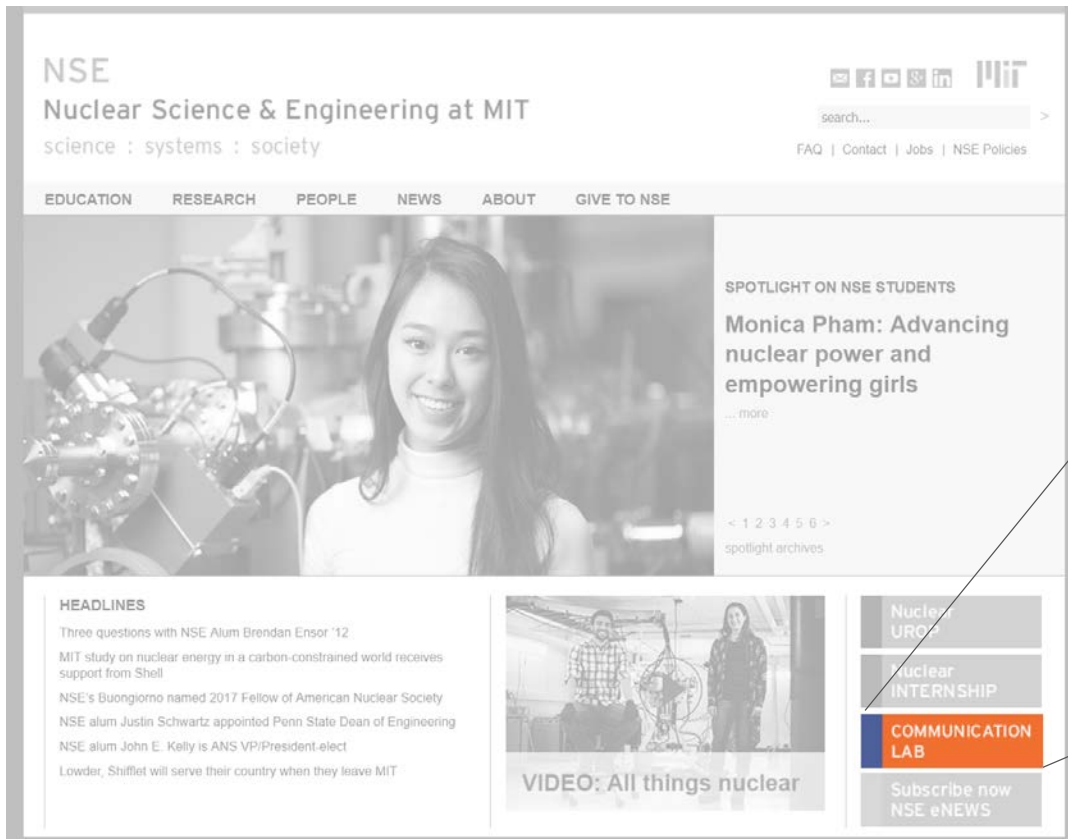
- Was developed by Communication Fellows
- Contains NSE examples
- Offers anytime access



Coaching session

- Provides one-on-one communication support
- Offers peer feedback
- Provides emotional support and access to additional resources

Learn more about the NSE Communication Lab.



The screenshot shows the homepage of the Nuclear Science & Engineering (NSE) program at MIT. The header includes the NSE logo, the text "Nuclear Science & Engineering at MIT", and the tagline "science : systems : society". There are social media icons for Facebook, YouTube, and LinkedIn, along with the MIT logo. A search bar and navigation links for "FAQ | Contact | Jobs | NSE Policies" are also present. The main navigation menu includes "EDUCATION", "RESEARCH", "PEOPLE", "NEWS", "ABOUT", and "GIVE TO NSE". The main content area features a large image of a woman in a lab setting, with a "SPOTLIGHT ON NSE STUDENTS" section titled "Monica Pham: Advancing nuclear power and empowering girls". Below this is a "HEADLINES" section with several news items, a "VIDEO: All things nuclear" section with a thumbnail image of two people, and a "COMMUNICATION LAB" section with a "Subscribe now NSE eNEWS" button.

NSE
Nuclear Science & Engineering at MIT
science : systems : society

search... >

FAQ | Contact | Jobs | NSE Policies

EDUCATION RESEARCH PEOPLE NEWS ABOUT GIVE TO NSE

SPOTLIGHT ON NSE STUDENTS
Monica Pham: Advancing nuclear power and empowering girls
... more

< 1 2 3 4 5 6 >
spotlight archives

HEADLINES

- Three questions with NSE Alum Brendan Ensor '12
- MIT study on nuclear energy in a carbon-constrained world receives support from Shell
- NSE's Buongiorno named 2017 Fellow of American Nuclear Society
- NSE alum Justin Schwartz appointed Penn State Dean of Engineering
- NSE alum John E. Kelly is ANS VP/President-elect
- Lowder, Shiftlet will serve their country when they leave MIT

VIDEO: All things nuclear

Nuclear UROP

Nuclear INTERNSHIP

COMMUNICATION LAB

Subscribe now NSE eNEWS

COMMUNICATION
LAB

Learn more about the NSE Communication Lab.

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Nuclear Science & Engineering
COMMUNICATION LAB



MEET OUR FELLOWS & STAFF

ABOUT THE LAB

USE THE COMMKIT

MAKE AN APPOINTMENT

Helping engineers communicate

Staffed by the NSE Communication Fellows, the NSE Communication Lab offers writing, speaking, and visual design support for engineers—by engineers.

USE THE COMMKIT

MAKE AN APPOINTMENT



SEARCH THE COMMKIT:

e.g. Article, Poster, CV



Our trained graduate student Communication Fellows offer individual coaching, targeted workshops, and a range of initiatives to support their peers as they learn key transferable communication skills that will help them achieve their career goals.

We invite MIT NSE undergraduate students, graduate students, and post-docs to make coaching appointments for any science or engineering work involving communication: posters, journal articles, resumes, fellowship applications, and more. Use us anywhere from brainstorming to final edits—the

IN THE SPOTLIGHT



Spotlight On Alumni: John Hanson

February 2, 2017
Reactor Engineer, Oklo

We have two meeting locations.



24-216



NW16-130

Meet the NSE Communication Fellows.



Leigh Ann Kesler
Fusion



Cody Dennett
Materials



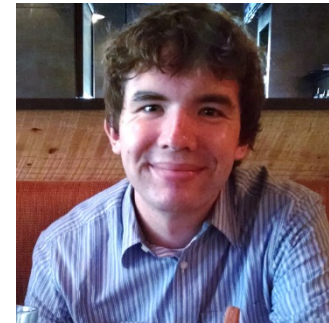
Mike Acton
Fission



Ben Magolan
Fission



Alicia Elliott
Materials



Patrick White
Security



MIT SCHOOL OF ENGINEERING
COMMUNICATION LAB

