



Performance Materials

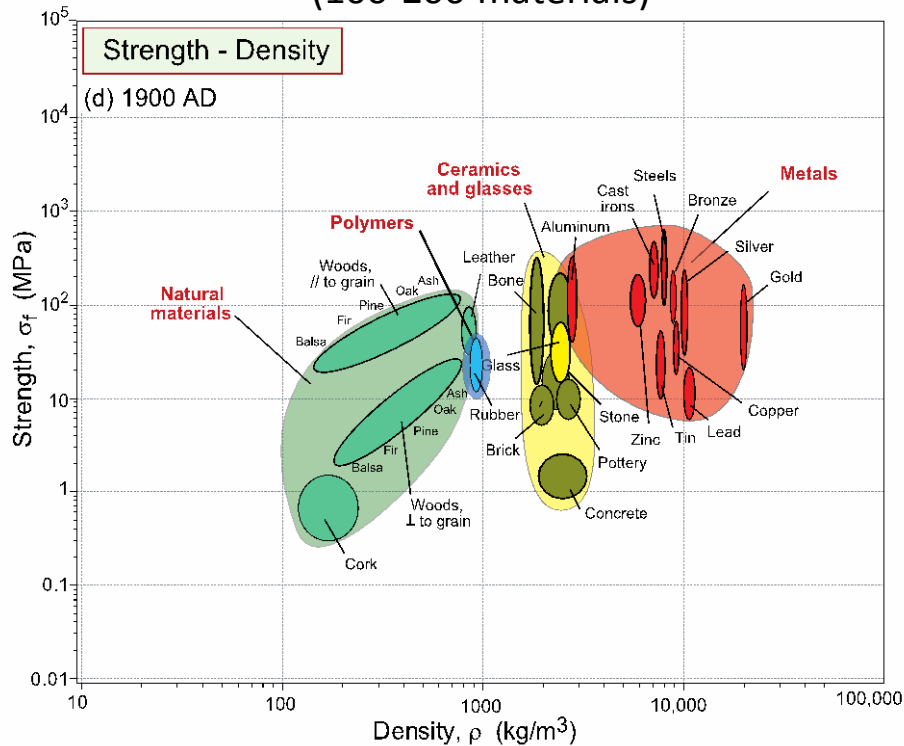
Susan Frosten, Nancy Howard,
Ron Kander, Barbara Kimmelman, Marcia Weiss

August 17, 2012

The Evolution of Performance Materials

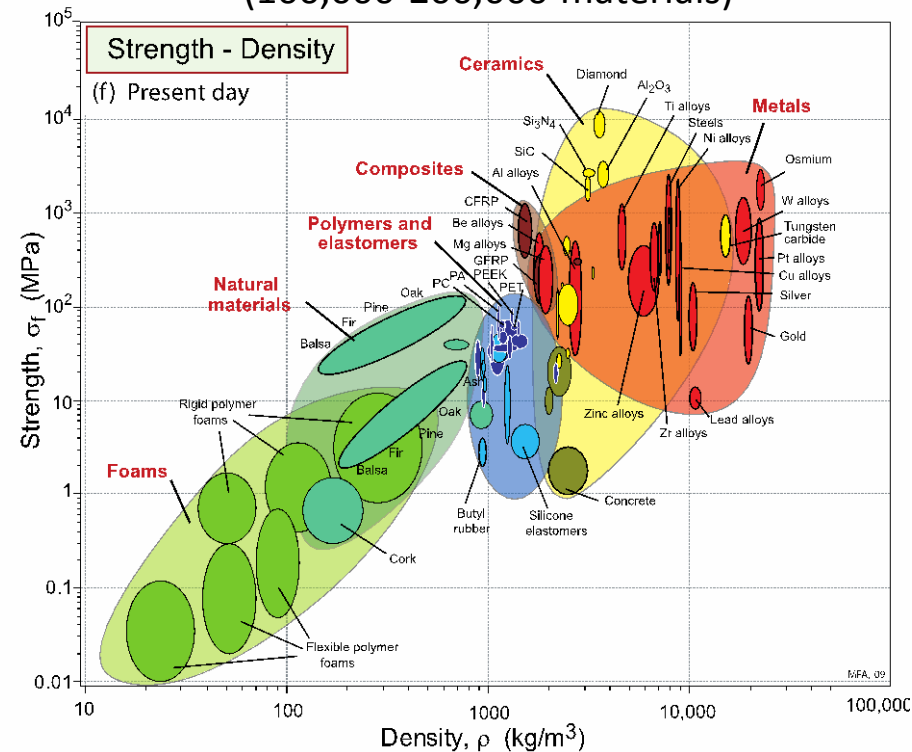
1900 AD

(100-200 materials)



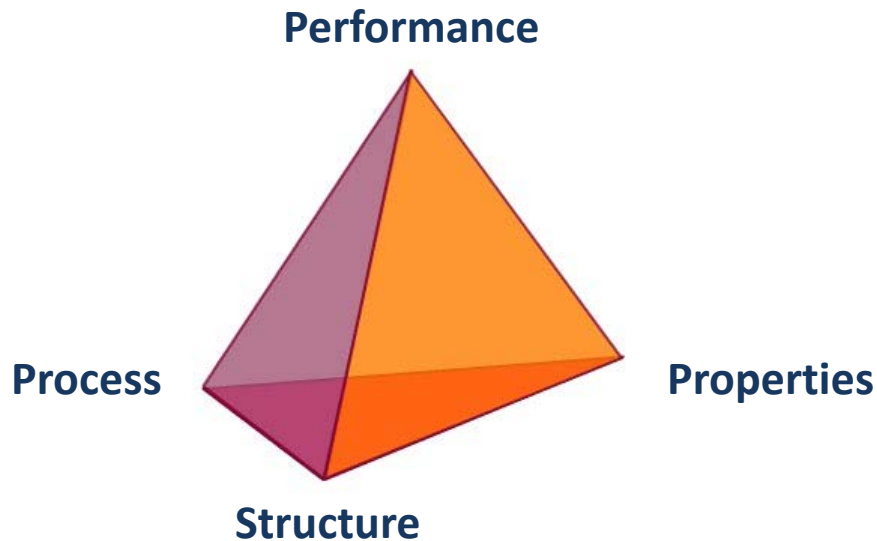
2012 AD

(100,000-200,000 materials)



Performance Materials

Core Values, Principles & Concepts



Spans Disciplines

Employs Systems Thinking

Integrates Thinking, Making, & Doing

Speaks to the Historical Roots of **PhilaU**
PHILADELPHIA UNIVERSITY

Performance Materials Proposed Core Curriculum

Materials in Our World (NEW)

- e.g., “Stuff” by Ivan Amato (with historical and current articles and news stories)

Materials Science (EXISTING)

- e.g., “Materials Science & Engineering “ by William Callister (with materials selection software)

Materials Selection (EXISTING)

- e.g., “Materials” by Michael Ashby (with materials selection software)

Materials Characterization Laboratory (NEW)

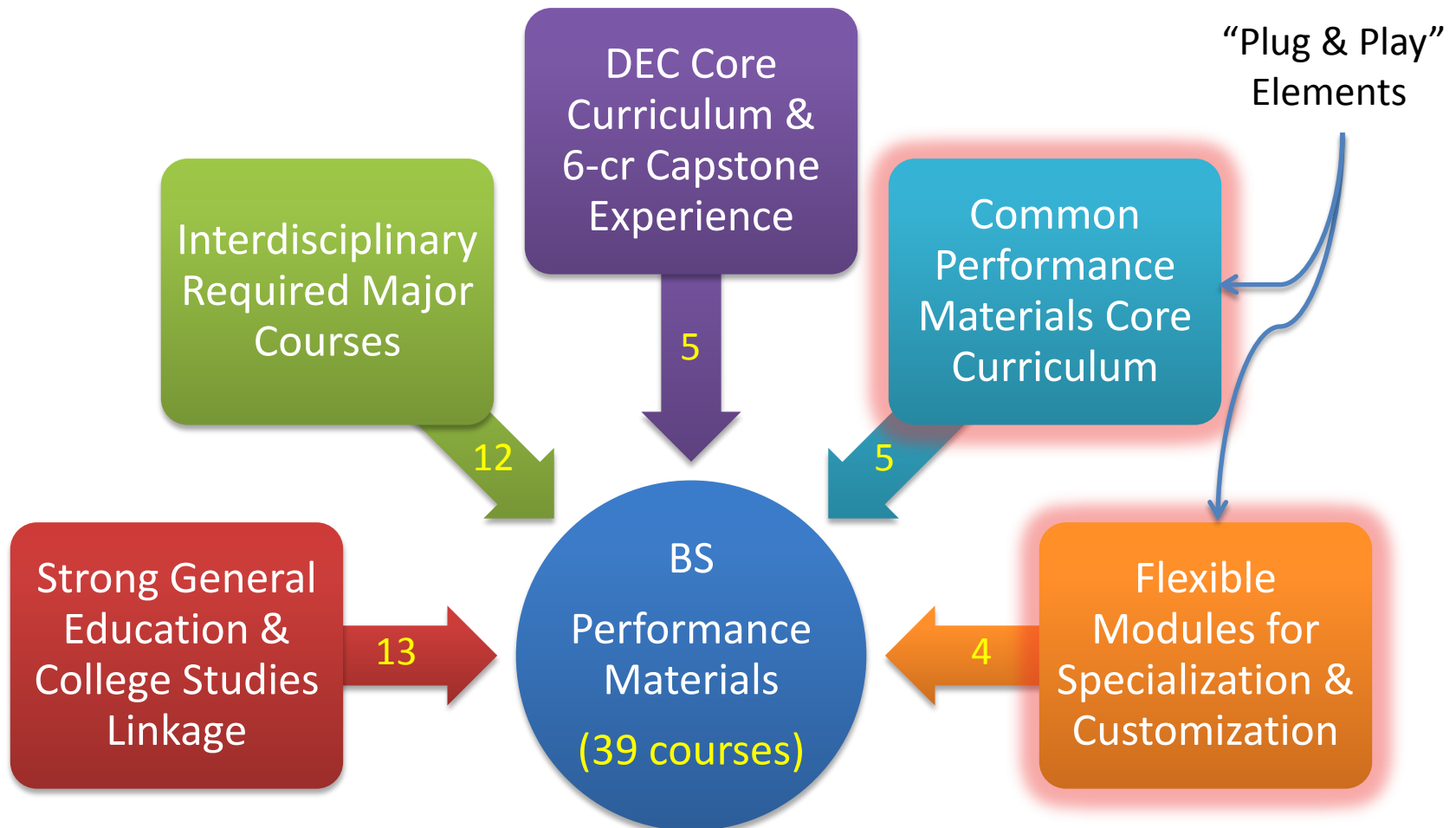
- Grundy Materials Laboratory (with materials selection software)

Materials Sustainability (NEW)

- “Materials and the Environment” by Michael Ashby (with materials selection software)

BS Performance Materials

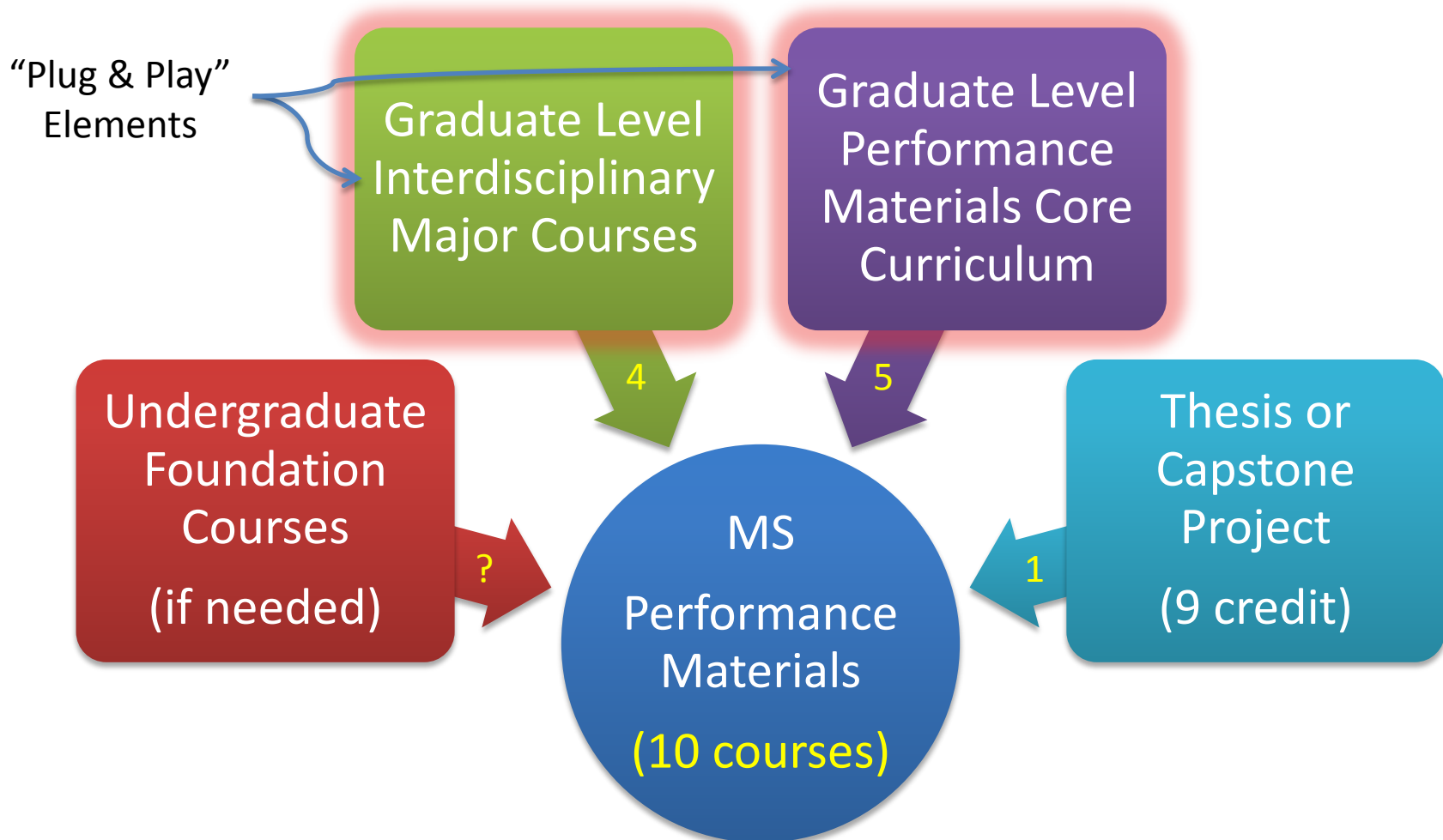
Example Curriculum Elements



20 New Students Per Year

MS Performance Materials

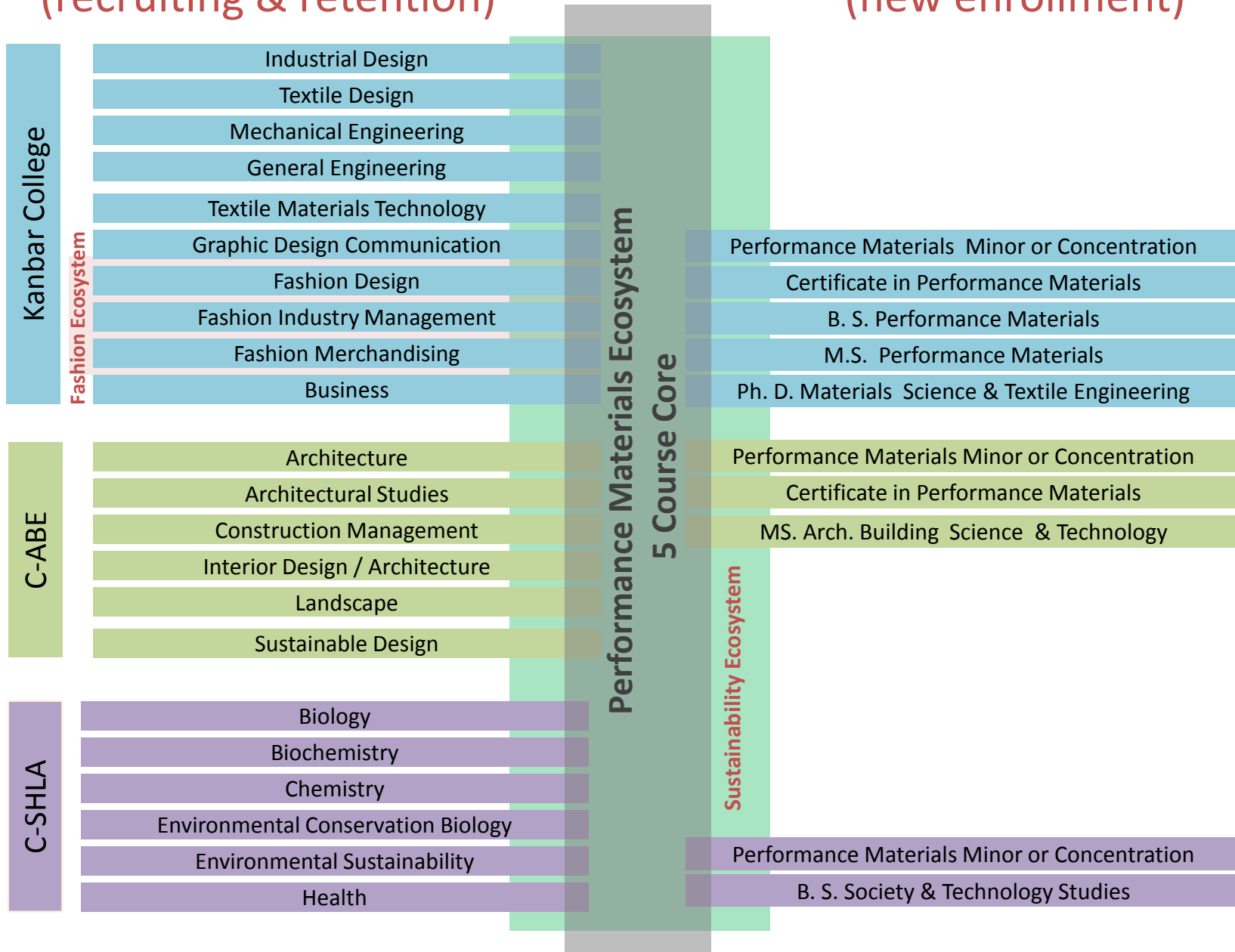
Example Curriculum Elements



8 New Students Per Year

Existing Programs (recruiting & retention)

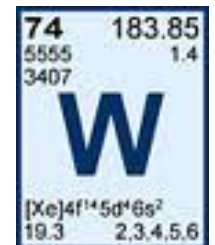
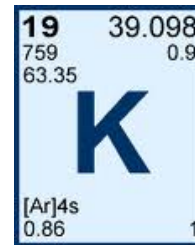
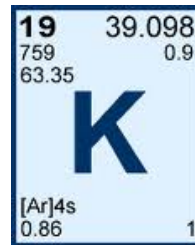
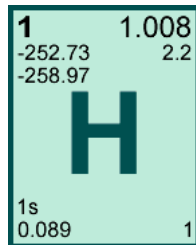
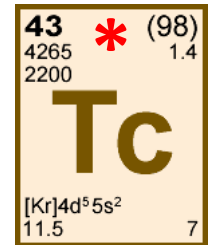
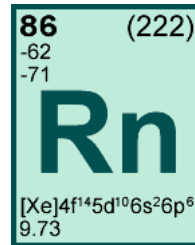
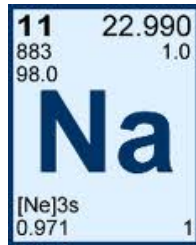
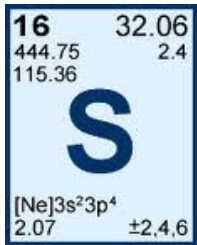
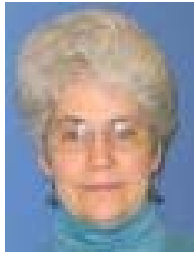
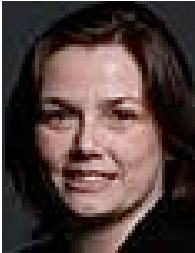
New Programs (new enrollment)



Next Steps



“Elements” of the Team



* The element Technetium (Tc) was once known by the name Masurium (Ma).