North American Wood Science Programs: History and Trends

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History

- First "Wood Technology" program: 1929 (Ellis 1964)

- Post World War II: 12 new programs created (Ellis 1964)

- 1964: 19 undergraduate & 6 graduate only WST programs (Ellis 1964)

- 1980: 24 undergraduate & 3 graduate only programs (Barnes 1980)

Trends

- Programs are typically under-enrolled with a disproportionately low number of females
- Number of programs is diminishing
- Programs are reinventing themselves and rebranding
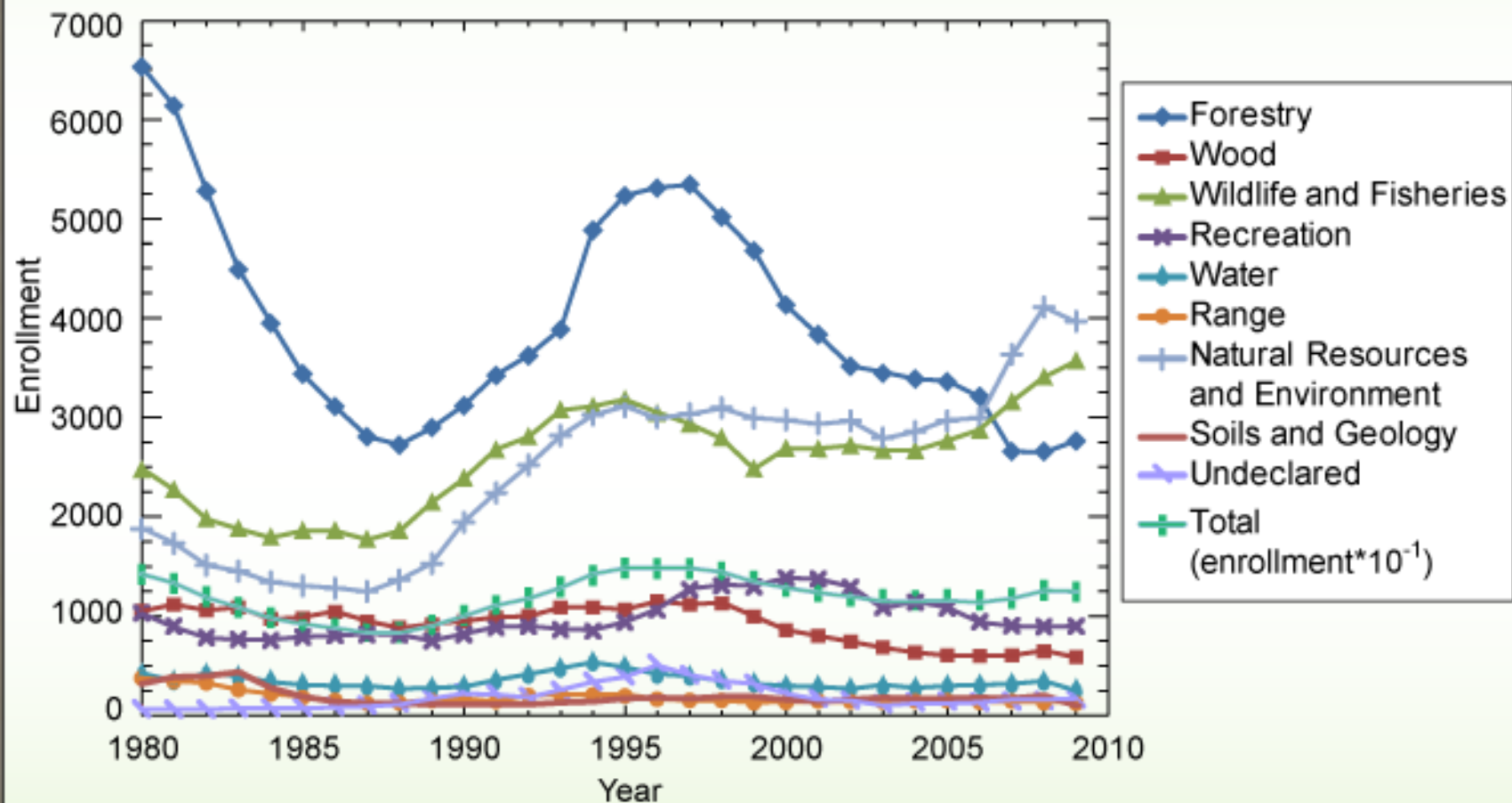- We are "in a quandary as to what constitutes a wood scientist/technologist" (Barnes 2007)
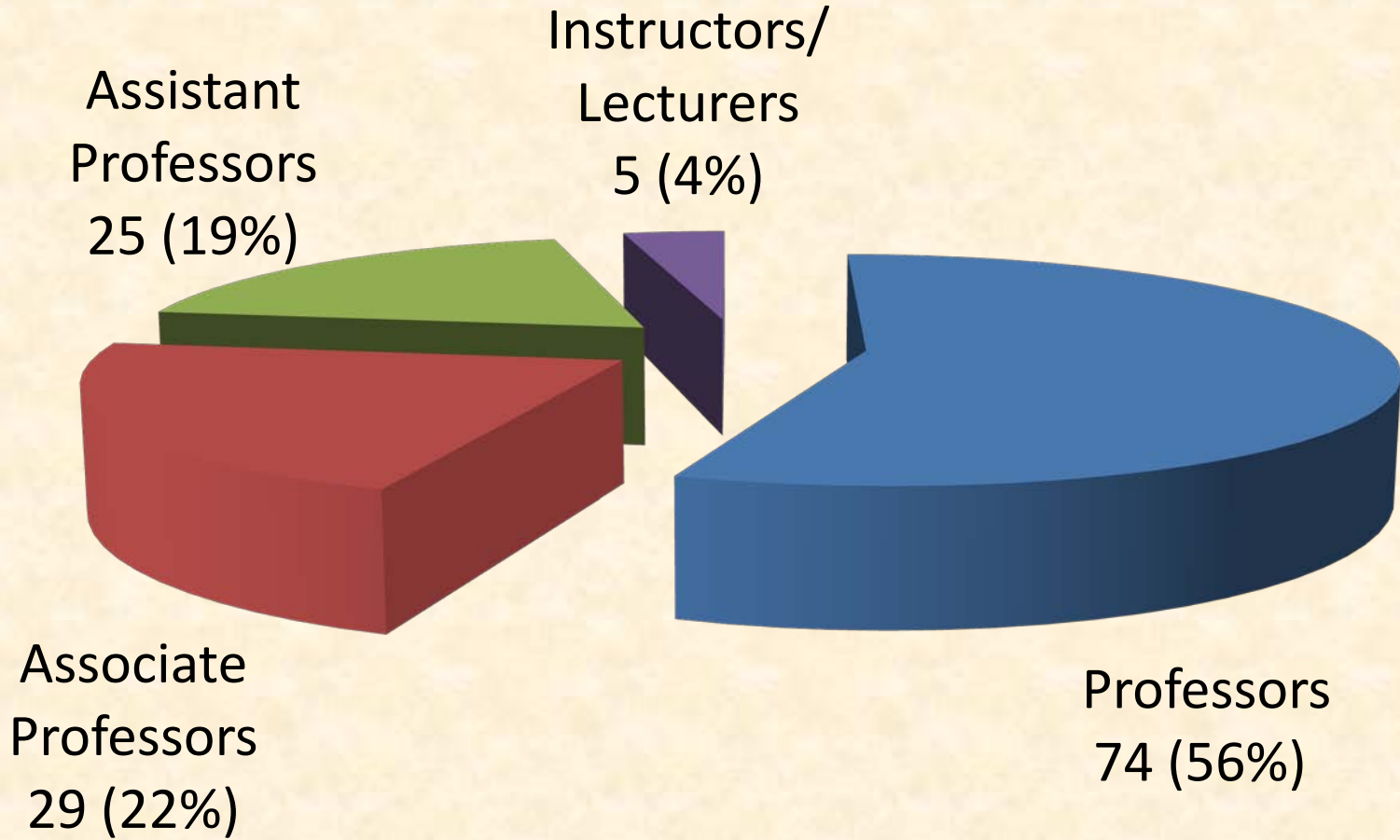
Enrollment and Graduates
North American WST Programs
2010-2011

	Enrollment		Graduates	
	Total	Average	Total	Average
B.S.	716	47.7	150	10.0
M.S.	179	11.2	47	2.9
Ph.D.	184	11.5	46	2.9

Undergraduate enrollments in natural resources by field of study for NAUFRP institutions, 1980-2009

Sharik and Lilieholm 2010

Faculty

Programs identified by Barnes (1980)

Auburn University

Clemson University

Colorado State University

Iowa State University *

Louisiana State University *

Louisiana Tech University

Michigan State University †

Michigan Tech University

Mississippi State University

North Carolina State University

Oregon State University

Pennsylvania State University

Purdue University *

State University of New York, ESF

Texas A&M University †

University of British Columbia

University of California

University of Idaho

University of Maine

University of Massachusetts

University of Minnesota

University of Missouri

University of Toronto *

University of Washington

Virginia Tech University

Washington State University †

West Virginia University

* Option in forestry curriculum
† Graduate only

Existing Programs

Auburn University *

Iowa State University *

Louisiana State University *

Michigan State University †

Mississippi State University *

North Carolina State University

Oregon State University

Pennsylvania State University

Purdue University

State University of New York ESF @

Université Laval

University of British Columbia

University of Idaho

University of Maine *

University of Massachusetts @

University of Minnesota

University of Toronto

Virginia Tech University

Washington State University †

West Virginia University

* Option in forestry curriculum
† Graduate only
@ Construction major
SWST Accredited programs are underlined

Growth of Programs

Degree	1964	1979	1988	1998	2007	Change '64-'07
BS	18	25	25	13	15	-3 (-17)%
MS	23	27	na	na	31	+8 (35%)
PhD	10	25	na	na	28	+18 (180%)

WHY??

Restructuring and Rebranding

- Programs engaging in restructuring and rebranding voluntarily and as a result of administrative fiat

- The former is preferable to the latter

Restructuring

- Merger with other departments
- Downsizing from a distinct degree program to a WST option within another degree program
- Morphing into biomaterials and/or construction curriculum
- Expanding degree offerings within a WST department

Rebranding

- Only two programs have not rebranded and/or restructured to a significant degree (both are in the process of doing so)

- Examples:
  - Bioproducts and Biosystems Engineering
  - Bioproducts/Bioenergy
  - Forest Biomaterials
  - Sustainable Biomaterials
  - Renewable Materials
  - Sustainable Construction Management

Restructuring and Rebranding is too often impeded by institutional governance (bureaucracy) and "turf" issues within the institution.

Maintaining a Common Identity

"Ideally, all academic programs in the field, and ultimately industry and government would adopt a similar terminology. A unique identity is good for recognition in some cases but to develop stronger, and more positive, 'brand recognition' for the field - across the industry, across academia, and across government institutions internationally – adoption of the same terminology is best." (Goodell 2010)

Prediction *

North American academic programs dealing with "wood science" will survive, but in what form and within what academic programs?

Graduate only?

Engineering?

Agriculture?

Forestry?

* From the guy who picked the Steelers to win the Super Bowl.

What are we going to do now?

- Regional or national consortia that share educational resources and faculty expertise
  - Distance education
- Will programs be limited to the "last program standing" within a given region supported by:
  - Academic Common Markets
  - Reciprocity Agreements
- Should U.S. programs look to international models (including Canadian universities)?

What can SWST do?

- Adapt SWST Accreditation Standards to allow rapid innovation and flexibility in curriculum development

- Provide opportunities for international exchange of ideas on WST education

- Facilitate collaboration and coordination among institutions

Thank you!

Any questions?