

The Open Org in Education

Greg Hislop – Drexel University

Heidi Ellis – Western New England University





$$\int_{-\infty}^{\infty} \frac{e^{ax}}{a} da = \int_{-\infty}^{\infty} \frac{e^{ax}}{a} da \quad (*)$$
$$= \int_{-\infty}^{\infty} \frac{e^{ax}}{a} da \quad \text{numerical calculation!}$$

is gilt: $\int_{-\infty}^{\infty} e^{ax} da = \ln |a| \quad (\text{Laplace 1912})$

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Academic Organization

College of Arts & Sciences

Math

Biology

Chemistry

English

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School of Engineering

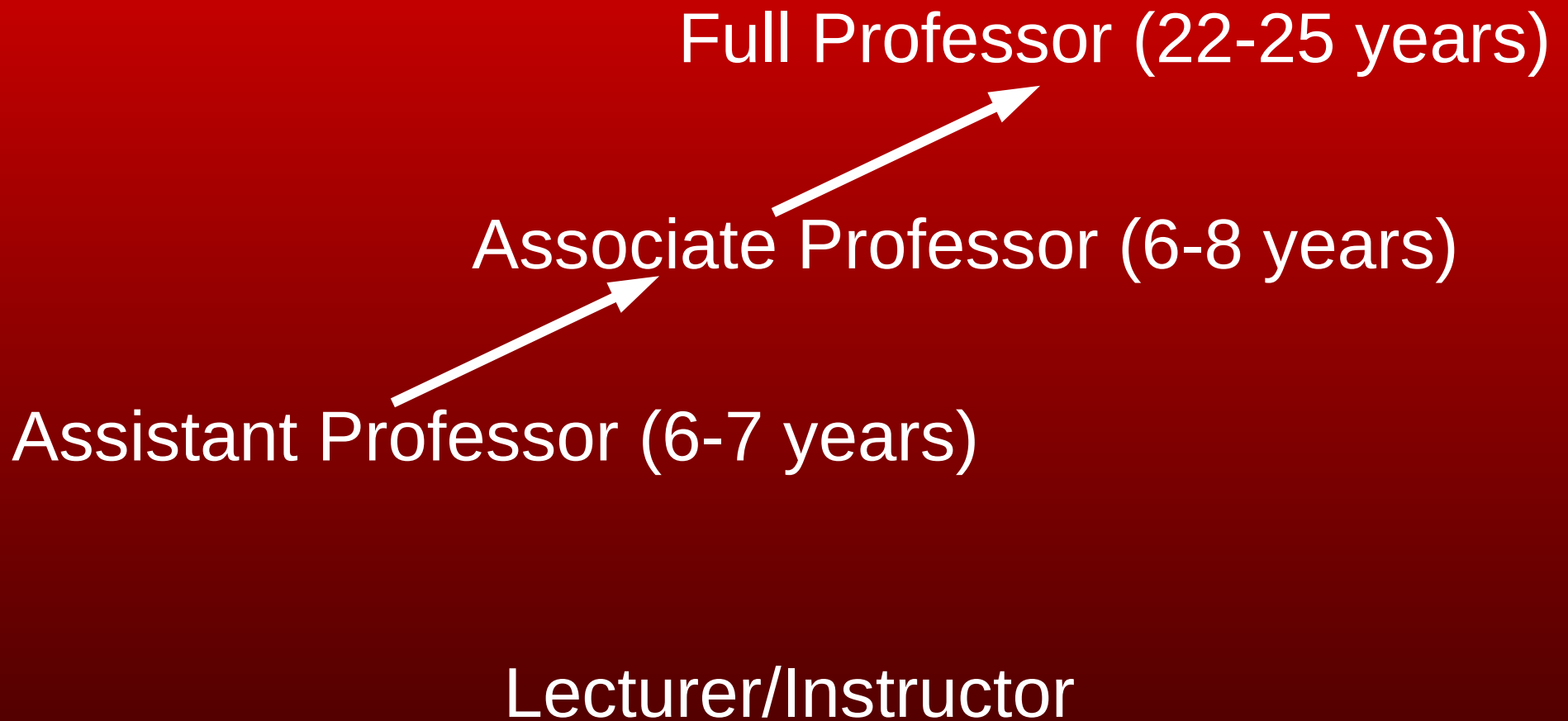
Mech. Eng.

Electrical Eng.

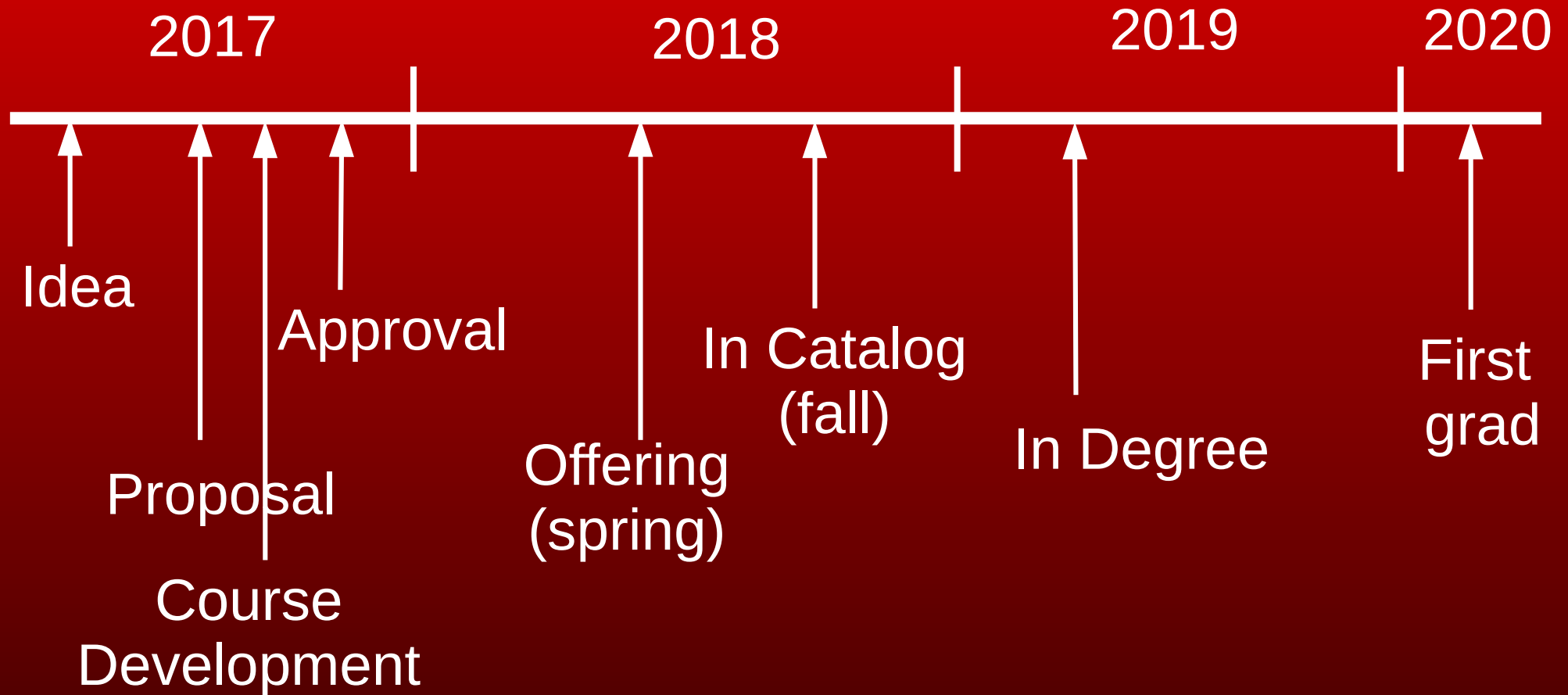
Chem Eng.

...

Faculty Hierarchy



Course Approval Process Sophomore Devops



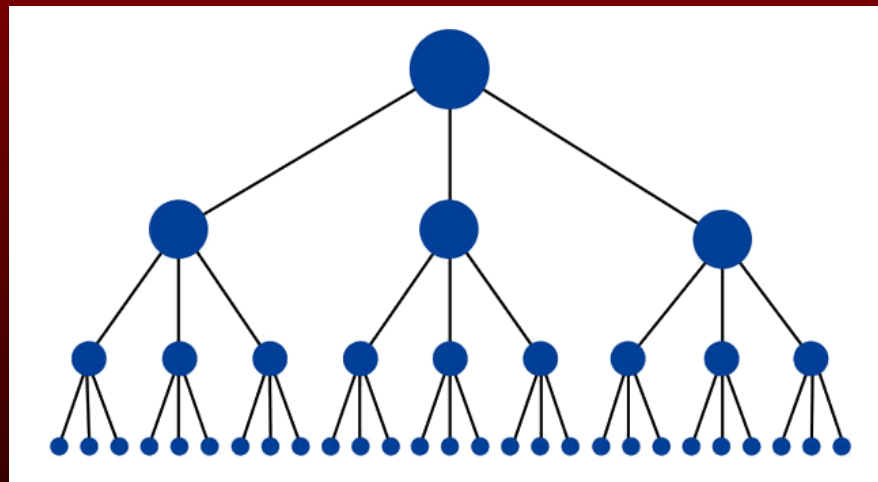
Open Organization

CHANGE
THE
MODEL



Aspects of Culture Change

- Change has to happen at all levels:
 - Course
 - Department
 - School/college
 - Institution
- How do we change from a hierarchy to open?



Big Picture: Center for Computational Science

- Interdisciplinary computing
- Humanitarian, real-world projects
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Path to Vision

- Start at course level
- Demonstrate value to faculty
- Invitation to be open
- Incentivize interdisciplinary collaborations

Foundations of an Open Source World

- Freshman – point of change
- Inculcate culture early
-

Foundations ... Empowerment



Foundations ...

Manage By Example

Foundations ... Fast Innovation



Foundations ...

Incremental Improvement

Foundations ... Collaboration

Culture Change

- Faculty members no longer the expert
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Learning Based on Meritocracy

- Students achieve performance-based objectives in their own time
- Objectives are updated agilely as new technology and theory emerge
- Students and faculty learn collaboratively from the community

Faculty Governance Based on Transparency

- jj

Rapid Content Innovation

- jj

Raises Lots of Questions

- How would degrees change?
 - New types of degrees?
 - Lifelong learning?
- How would department/school organization change?
- How would faculty governance change?
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The Perfect World

- Learning is humanitarian, real-world and project-based
- Students achieve performance-based objectives
- Objectives are updated agilely as new technology and theory emerge
- Students and faculty learn collaboratively from the community