Creating an Academic Identity

and the Impact of the Boyer Commission Report

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1998 Boyer Commission Report

- **Reinventing Undergraduate Education: A Blueprint for America's Research Universities**

- **"What is needed now is a new model of undergraduate education at research universities that makes the baccalaureate experience an inseparable part of an integrated whole"** (p. 7)

Boyer Report: Ten Ways to Change Undergraduate Education (1)

1. **Make research-based learning the standard**
2. **Construct an inquiry-based Freshman year**
3. **Build on the freshman foundation**
4. **Remove barriers to interdisciplinary education**
5. **Link communication skills and course work**

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Boyer Report: Ten Ways to Change Undergraduate Education (2)

6. Use information technology creatively
7. Culminate with a capstone experience
8. Educate graduate students as apprentice teachers
9. Change faculty reward systems
10. Cultivate a sense of community

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Overview

- Contrasting models of academic work
- Which model is likely to shape the professional identities of the upcoming generation of academics?
- Results of study about early career academics' teaching/research integration
- Ways to encourage more integration

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Think of your academic role models . . .

How – and how much -- do (did) they integrate teaching and research?

How does their example influence you now?

Tale of two professors

- **Ryan Neumann, Physicist**
  - Ground breaking research done off-campus 3 days per week
  - Received good student reviews for his entertaining lectures
  - Survived by teaching same courses year after year
  - Thought separate tracks for teaching & research faculty a good idea

- **Lakshman Yapa,* Geographer**
  - Integrates research, teaching, and community service with *Rethinking Urban Poverty: Philadelphia Field Project:*
  - Undergraduates and graduate students earn academic credit doing action research to improve quality of life and agency for residents of West Philadelphia
  - Advocate for public scholarship

*real name – all other names are pseudonyms

Two ways to accomplish complex work

- **Bureaucratic model**
  - subdivide and apportion work to different units that specialize in a limited set of tasks
  - Add layers of supervision to coordinate and integrate tasks across units **(Scott, 2003)**
- **Professional model**
  - Engage highly qualified, flexible, and complex workers able to handle unpredictable work problems independently **(Scott, 2003)**

Academics: Fragmented workers or integrated professionals?

- **Fragmentation**
  - Research, teaching, and service (or even discovery, integration, teaching, and application—**Boyer, 1990**) as distinct and separate aspects of academic work
  - Is leading to bureaucratic division of labor
- **Integration**
  - Academic work an inseparable whole in which professionals tease apart teaching, research only to see how each element informs and enriches the others

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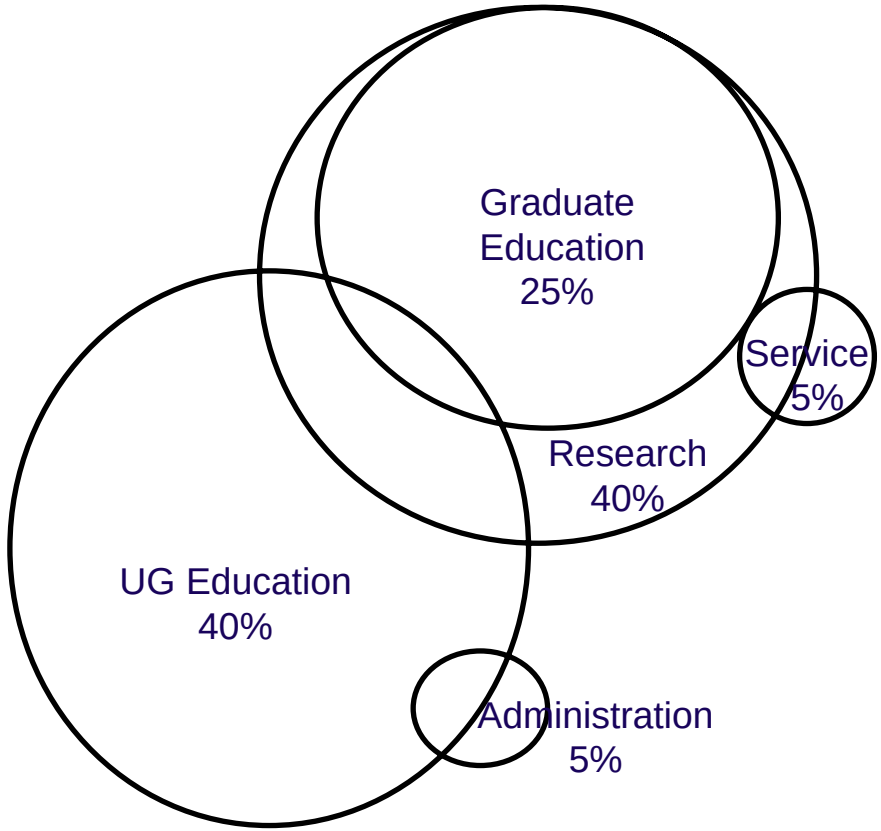
Fragmented vs. integrated models of faculty time allocation

Teaching 50%	Research 30%
Administration 12%	Service 8%



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Are members of the next generation of faculty likely to develop fragmented or integrated professional identities?

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Professional Identity

- “the perception of oneself as . . . particular type of professional” (Bucher & Stelling, 1977)
- associated with having unique skills and knowledge, the ability to perform specific work tasks, and an association with a particular reference group (Holland, 1988; Becker & Carper, 1956)
- evolves incrementally as individuals experiment with possible selves, perceive (in)congruence of current self with expectations of significant others(Ibarra, 1999)
- Shaped by socialization, own values, experiences

New academics are told to fragment their work

- **Graduate students hear from faculty mentors:**
  - Research is king **(Chemistry)**
  - Teaching is an imposition on research faculty **(Chemistry)**
  - The best researchers are hired by research universities; others go to other institutions and teach **(Chemistry)**
  - If research is not your top priority, you might as well drop out of the doctoral program **(Business)**

- **Early career faculty hear from colleagues & dept. heads:**
  - Teaching could only hurt me **(Chemistry)**
  - The department wants faculty to have very strong research programs that will eventually draw good quality students **(Chemistry)**
  - Teaching is entirely measured in terms of student rating scores. In my area, teaching is not nearly as important as publishing **(English)**
  - Do not participate in program that helps faculty integrate research in undergraduate courses **(Engineering)**

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Nevertheless, new academics perceive research/teaching synergies

- **Much of the research is about teaching.**

  Chris Ewing, Assistant Professor Chemistry

- **They continuously over-lap. Research is teaching.**

  Heidi Gold, Associate Professor, Chemistry

- **I often think of [my research] as a kind of extension of teaching.**

  James Cary, Assistant Professor, English

- **I would have a hard time separating out the one from the other.**

  Jim Sheverelle, Associate Professor, English

- **The overall arguments that I'll make about specific texts, especially the ones that appear in my book, do appear in my undergraduate teaching almost all the time.**

  Laurel Sun, Associate Professor, English

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How do early career academics reconcile others' messages with their own perceptions and their own experiences of the relationship between teaching and research?

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Research Questions

How do early career academics enact integration or fragmentation of teaching and research in their daily lives?

- ***In what ways*** **do they integrate teaching and research?**
- ***To what extent*** **do they integrate teaching and research? (e.g., engage in activities that meet both goals at the same time)**

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13 Faculty Participants

	English		Chemistry	
	F	M	F	M
Assistant		1	2	3
Associate	3	2	1	
Full			1	

12 married

1 single dad

3 ethnic minorities

2 stay-at-home wives

1 stay-at-home husband

Disciplinary Characteristics

CHEMISTRY

- Fast-paced publishing
- High expectations to secure external funding
- Much collaboration within research groups
- Competition between research groups
- Low proportion of women

ENGLISH

- Slow publishing pace for few but long works
- Little opportunity for external funding
- Independent research
- Minimal direct competition
- Relatively high proportion of women

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Methods: Activity Data Collection

Waking hours	
Direct observation	**304.2 hours**
Immediate report	**343.4 hours**
Subtotal Waking	**647.6 hours**
Sleeping (reported)	**206.1 hours**
TOTAL	**853.7 hours**

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Methods: Activity Coding

4975 discrete activities, each coded for:

- **Demographics**
  - discipline, gender, discipline, tenure status
- **Purpose**
  - administration, graduate education, undergraduate education, research, service, general work, personal
- **Aspect**
  - e.g., for UG or Grad education: advising, classroom, grading, informal teaching, meetings & memos, preparation, course development
  - e.g., for research: grants, inquiry, logistics, scholarship, supervising persons, writing and editing, presenting, other research (e.g., SOTL, training students)
- **Characteristics**
  - medium, types and numbers of participants, location, initiator

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Methods: Interviews

- Before and after 3 days of observations
- Questions elicited information about:
  - Work Responsibilities, schedule, and environment
  - Perceptions of requirements for tenure and/or promotion
  - Perceptions of links & conflicts between work roles
  - Time allocated to work roles using Venn diagrams to depict extent of role integration

How early career faculty integrated teaching and research

- **Teaching students how to conduct disciplinary research**
  - In research labs
  - In courses for academic credit
- **Teaching current disciplinary research**
  - Discussing research ideas, findings in the classroom
  - Using same material to prepare for class at same time as for research
- **Scholarly research about teaching**
  - Reflective inquiry about student learning
  - Educating graduate students to be reflective teachers

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Teaching students how to conduct disciplinary research in lab

I was doing some things for my own work that [undergraduate student] would use the same techniques for what she was doing. So what I did is, I sort of put off a day of doing what I normally would have done yesterday so that I could do it when she was here -- so I can show her how to do it when I was doing my own thing. So we did it together.

Chris Ewing, Assistant Professor, Chemistry

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Teaching students how to conduct disciplinary research in course

I taught a class to get the under-graduate research journal going and don't usually teach editing, web designing, and things like that like I did this semester. . . one of the things that's interesting to me about trying to put together a project in which the department publishes the undergraduate research journal is to try to think of how we could be integrating undergraduates more into the kind of research we do. . . . I think we probably, if we use our imagination a little bit, could come up with some other ways of doing that.

Jim Sheverelle, Associate Professor, English

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Teaching disciplinary research concepts in classroom

- I was able to teach the documentary that I knew that I was going to write on . . . in both classes so that my class prep contained the basics for the writing that I just completed last week. So that was a good overlap.

  Laurel Sun, Associate Professor, English

- I'm really lucky to be able to teach the class that I teach. . . They are completely interwoven – my research and my teaching. So, it's cheating in a way, I feel sometimes, because all of the reading that I do for class and the preparations that I do are things that I think about all of the time or should be thinking about in my research.

  Ingrid Holbrooke, Assistant Professor, Chemistry

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Scholarly research about teaching

- **Sarah Levin, full professor of Chemistry, taught one of three concurrent 300-student sections of General Chemistry. She and her two colleagues had revised the curriculum. While teaching the course, she held separate meetings each week with**
  - **the two colleagues**
  - **15 graduate teaching assistants**
  - **15 undergraduate representatives from each section**

  to gather and analyze information about what, how, and why students were (and were not) learning.

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Percent working time that faculty integrated teaching & research

Research integrated with:	Chemistry (n=7)	English (n=6)	TOTAL (n=13)
Undergraduate education	5.3	8.3	6.5
Graduate education	16.8	8.8	11.5
UG and grad education	2.2	0	1.3
Total R/T integration	24.3	17.1	19.3

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% Work Time Allocated to Work Roles

WORK ROLES	CHEMISTRY	ENGLISH
Administration	9.2	7.6
Grad Education	14.9	12.5
UG Education	8.3	17.9
Research	38.2	22.5
Service	0.6	0.5
General Work	4.3	4.3
TOTAL	133.7	130.4
Recorded work hours	*210:06*	*136:23*
Average hours/day	*9:47*	*8:14*

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Impact of study on one participant

- **Vanessa Lynch, Associate Professor of English**
  - **I haven't figured out how to make my research and teaching integrated. (first interview)**
  - **I think I'm often doing more than one thing at a time. That's what this study made me realize. It's rare that I'm just doing one thing at a time. But I don't know any abstract strategies. I think it's just scrambling, you know. (final interview)**

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Aha! And next questions . . .

- **Early career faculty integrate teaching and research nearly 20% of their work time, even though they may not even realize it *and* they are discouraged from doing so.**
- **What might we do to encourage them to integrate their work more effectively, thoughtfully, strategically?**
- **How can we, thereby, encourage them to develop academic identities as integrated professionals?**

Ways to encourage integration

- **Evaluation**
  - **Workload assessment**
  - **Annual reviews**
  - **Tenure and promotion dossiers**
- **Institutional resource allocation**
- **External funding**
- **Senior colleagues as role models**
- **Satisfaction with effectiveness and efficiency of their own work**

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Evaluation – Academics' perspectives

- I think there's probably an under appreciation of mentoring skills for your own students. It's as if your skills are not really relevant whenever they're your own students as it it's a selfish thing you're doing and that this can't be, you know, it's more like you're promoting your own research so we can't really care if you're a good mentor or bad mentor, it's not relevant to our department.

  Chris Ewing, Asst. Prof., Chemistry

- We are walking into the classroom wondering more about the scores we are going to get than about the service we are performing.

  Lewis Greene, Assoc. Prof., English

- I think the merit review exercises are very, very narrow in what they look at and that it's at the department level of the merit review that there is an opportunity to have impact.

  Sarah Levin, Full Prof., Chemistry

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Integrated workload report (1)

TEACHING	Hrs/ week	% time teaching that also:
classroom instruction		_____ advanced development of new knowledge _____ fostered university, profession, or external community development
preparation		
grading		
individual instruction		
meetings, memos		
course development		
TEACHING TOTAL		

Integrated workload report (2)

RESEARCH	Hrs/ week	% time doing research that also:
Inquiry		_____ enhanced students' development _____ fostered university, profession, or external community development
Scholarly development		
Logistics		
Grant writing/ admin		
Writing/editing		
Presenting		
RESEARCH TOTAL		

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Integrated annual reports and P & T dossiers

- **List accomplishments and describe how each contributed to:**
  - students' learning and development
  - development of new knowledge
  - Fostered university, profession, or external community development
- **Provide evidence that each contribution:**
  - began with clear, important, and achievable goals
  - demonstrated knowledge of relevant literature and skills
  - applied appropriate methods effectively
  - achieved goals that add to knowledge in the field
  - presented results for peer or public review

(Glassick, Huber, and Maeroff (1997)

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Institutional resource allocation

- **COURSE DEVELOPMENT: This semester, I got a grant. It's a fund for excellence in learning and teaching . . . to put together and introduce a new student focus group and faculty development work on a new course that I'm creating this spring. It's an undergraduate . . . web-based research journal for the undergraduates. A lot of undergraduates who are doing research and they don't really have anyplace to publish it.**

  Jim Sheverelle, Associate Professor, English

- **UG RESEARCH: There is a fund for under-graduate education. There's always under-graduates in the lab. It's . . . grass roots teaching going on while the graduate students are helping out with that. So we are training them to teach as well.**

  Heidi Gold, Associate Professor, Chemistry

External funding: National Science Foundation

Integration of research and education is one of "three core strategies that guide [NSF] in establishing priorities, identifying opportunities, and designing new programs and activities. . . . Effective integration of research and education at all levels infuses learning with the excitement of discovery and assures that the findings and methods of research are quickly and effectively communicated in a broader context and to a larger audience."

NSF GPRA Strategic Plan, 2001-2006

NSF Broader Impacts Criterion

- ***How well does the activity advance discovery and understanding while promoting teaching, training, and learning?***
- **How well does the proposed activity broaden th participation of underrepresented groups?**
- **To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks and partnerships?**
- **Will the results be disseminated broadly to enhance scientific and technological understanding?**
- **What may be the benefits of the proposed activity to society?**

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Center for the Integration of Research, Teaching, and Learning

- Five-year, $10M project funded by NSF
- Univ. of Wisconsin, Michigan State, Penn State, and expanding
- GOAL: Prepare STEM graduate students, post-docs & new faculty for successful careers that integrate forefront research and superb teaching and learning
- Core ideas
  - Teaching as Research
  - Learning Communities
  - Learning through Diversity

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Senior colleagues who integrate teaching and research

- **Informal networks within departments**
  - "Gang of many more than six"
- **Collaborations across departments**
  - Interdisciplinary Consortium for Organized Research in Elearning (ICORE)
  - Public Scholarship Associates
- **Mentoring programs**
  - WISE – Sarah Levin

Satisfaction from effectiveness and efficiency of work

- My first undergraduate will be graduating this year. She's been in my lab two years, and to see her applying to graduate schools and figuring out what she wants to do, maybe that helps a little bit. It's fun and it makes me feel good.

  Michelle Fisher, Assistant Professor, Chemistry

- There is something about the preparation of a text for a classroom presentation that takes one a step further into the text and sometimes allows for the exploration of issues that your mind kind of ran over in a flash while you were doing the research. It might have come out when you actually did the writing, but sometimes you actually discover certain things about the book through the process of teaching.

  Lewis Greene, Associate Professor, English

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Concluding thought . . .

The less that institutional evaluations, structures, and cultures fragment faculty activities and products into mutually exclusive categories, the more academics will

- enrich their classroom teaching with their research
- conduct scholarly inquiry about their teaching to improve student learning
- engage undergraduates' in inquiry
- enhance their research with lessons learned with and from students

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