

# The Formation of Scholars

## Rethinking Doctoral Education for the Twenty-First Century

### About the Carnegie Initiative on the Doctorate

The 1990s saw several blue-ribbon commissions and sponsored research reports that offered recommendations to make doctoral education more effective. In their wake it seemed timely to move from talk to action, and so The Carnegie Foundation for the Advancement of Teaching partnered with The Atlantic Philanthropies to undertake a five-year project called the Carnegie Initiative on the Doctorate, or the CID. The initiative, which ran from 2001 through 2005, was designed to be both an action project and a research project. Its objective was to support selected academic departments' efforts to improve the effectiveness of their doctoral programs. The project invited participating departments to create local solutions suited to what they themselves identified as their needs and problems. The project involved eighty-four PhD-granting departments in six fields—chemistry, education, English, history, mathematics and neuroscience.

Over the five years of the program, participating departments made a commitment to examine their own purposes and effectiveness, to implement changes in response to their findings, and to monitor the impact of those changes. Many used their participation to continue plans and activities that were already begun but would benefit from the structure, prestige and interaction provided by a national initiative. Carnegie's role, in turn, included visiting the departments, interviewing campus team members, and bringing project participants together (sometimes by discipline, sometimes by theme) to report on their progress, to learn from one another, and to help make sense of their experiences in ways that others can build on. In addition, both faculty and students participated in project-wide surveys, the results of which served as rich grist for discussion and debate about the preparation of scholars in the broadest sense, whether they work in industry, government or academe.

### About the Authors

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HIGHLIGHTS FROM

# THE FORMATION OF SCHOLARS

RETHINKING DOCTORAL  
EDUCATION FOR THE TWENTY-  
FIRST CENTURY

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A PUBLICATION OF



THE CARNEGIE FOUNDATION  
*for the* ADVANCEMENT *of* TEACHING

“The best doctoral programs attempt to discover the ‘sweet spot’ between conservation and change by teaching skepticism and respect for earlier traditions and sources while encouraging strikingly new ideas and courageous leaps forward.”

*–Carnegie President Lee S. Shulman*

## Introduction

Some 375,000 men and women are pursuing doctoral degrees in institutions of higher education in the United States. Over 43,000 will graduate this year. Many of those who receive PhDs will assume positions of leadership and responsibility in arenas that directly shape the lives we lead. PhDs develop life-saving medical interventions, shape social programs and policies, and turn their talents to entrepreneurial ventures in the global economy. Approximately one-half of those who receive doctorates this year will join the ranks of college and university faculty who educate today's undergraduates in the United States and beyond, shaping the futures of our children and grandchildren. And some will prepare new PhDs, so the effects of doctoral education ripple out across nations and generations. The importance of doctoral education to this country's current and future prospects can hardly be overestimated. The question is: What will it take to ensure the U.S. continues to be, as many have observed, "the envy of the world"? What will it take to meet the challenges that doctoral education faces today and to make the changes those challenges require?

Some of the challenges are long standing and well known. About half of today's doctoral students are lost to attrition—and in some programs the numbers are higher yet. Those students who persist often take a long time to finish and along the way find their passion for the field sadly diminished. Many are ill-prepared for the full range of roles they must play, be it in academe or beyond, and often the doctoral experience is marred by a mismatch between the opportunities available to students as they complete their work and their expectations and training along the way. And in most disciplines, women and ethnic minorities are still underrepresented among doctoral students.

What makes all of these challenges even more challenging is that few processes for assessing effectiveness have been developed in graduate education, and it is difficult to muster ambition or urgency for doing better in the absence of information about what needs improvement. Thus, one finds attitudes of complacency ("Our application numbers are strong and so is our national ranking, so where's the problem?"), denial ("We don't have problems with gender or ethnic diversity here"), and blame ("Students these days just aren't willing to make the kinds of sacrifices we did to be successful").

Complicating matters is a set of newer challenges, many of them emerging, and only partly recognized and understood. New technologies are altering and accelerating the way knowledge is shared and developed. And the marketplace for scholars and scholarship is now thoroughly global. Much of the most important, pathbreaking intellectual work going on today occurs in the borderlands between fields, blurring boundaries and challenging traditional disciplinary definitions. The need for firmer connections between academic work and the wider world of public life is increasingly clear, as well. And graduate education, like higher education more generally, faces shifting student demographics, new kinds of competition, growing pressures for accountability, and shrinking public investment. In short, expectations are escalating, and doctoral programs today face fundamental questions of purpose, vision and quality.

## Vision

The PhD is a route to many destinations, and those holding the doctorate follow diverse career paths. Some seek out a life in academe, while others choose business or industry, or work in government or non-profit settings. Yet all are scholars, for the work of scholarship is not a function of setting but of purpose and commitment. The profession of the scholar requires specialized, even esoteric knowledge. But it also entails a larger set of obligations and commitments that are not only intellectual but moral.

In this sense, doctoral education is a complex process of formation—a term borrowed from Carnegie’s work on preparation for the professions, especially the study of clergy. What is formed, in short, is the scholar’s professional identity in all its dimensions.

The concept of formation also brings into focus the essential role of the learner. Clearly there are aspects of graduate education that faculty must pass along to graduate students; transmission is fundamental to education. But the development of professional identity as a scholar is ultimately a process that students themselves must shape and direct. Some of the most exhilarating findings from the CID point to what happens when students are given more active agency and more responsibility for their own progress and development—whether by using new tools, such as portfolios, for documenting and reflecting on their progress; by serving as mentors to one another; by pursuing connections between research and teaching; or by participating in departmental deliberations about the structure and effectiveness of their own doctoral program.

In *The Formation of Scholars* Carnegie challenges educators to consider how graduate programs can constructively grapple with questions about what they do, why, and with what success. This is hard work, with few tools or habits ready at hand. One of the central aims of the CID has been to provide frameworks—such as the ideas of stewardship and formation—to guide such reflection and self examination. In the process, the CID learned a lot about the obstacles to this kind of stocktaking—how living with cross-purposes is sometimes easier than negotiating a common vision, for instance. But what also emerged were “existence proofs” of how programs in a variety of fields can hold a mirror up to themselves and enact principles that lead to much more powerful experiences for students.

## Four Themes

*The Formation of Scholars* approaches change in doctoral education through four themes: **talking about purpose, the principles of formation, apprenticeship reconsidered,** and **intellectual community.**

### Talking About Purpose

Absent from most doctoral programs are processes, tools and occasions through which both faculty and graduate students can apply their habits and skills as scholars—their commitment to hard questions and robust evidence—to their purposes and practices as educators and learners.

Serious engagement with questions of purpose needs serious fuel, and some of the best fuel comes in the form of information. Often in educational settings the need for data and evidence of effectiveness is seen as something required by others (and such requirements are on the rise), but some of the most forward-looking, purposeful graduate programs have begun to create and analyze their own evidence, motivated by questions they want to answer. In doing so, they turn their research skills on themselves.

As Carnegie Foundation President Lee S. Shulman argues, there are inherent obligations and opportunities associated with becoming a professional scholar/educator, and especially with the responsibility to “treat our courses and classrooms as laboratories or field sites, and contribute through scholarship to the improvement and understanding of learning and teaching in our field.”

### Principles of Formation

Serious structural and cultural changes in PhD programs are required for meaningful formation in a world that will surely demand more of society’s most educated citizens. In response, Carnegie proposes three principles for student formation: (1) progressive development towards increasing independence and responsibility, (2) integration across contexts and arenas of scholarly work, and (3) collaboration with peers and faculty at each stage of the process.

The idea is not to add new elements to PhD programs, but to shape and reshape existing ones to be more educationally formative. This view of improvement brings with it three imperatives:

- The first pertains to faculty. Faculty members have a responsibility to become familiar with emerging principles and insights that can guide student’s transition from experience to expertise. Moreover, they are responsible for bringing to their work with students the same habits of inquiry and evidence-gathering they bring to their research, asking hard questions about whether (and which) students are meeting program goals and how those goals might be more successfully pursued.

#### QUESTIONS ABOUT PURPOSE

- What is the purpose of the doctoral program? What does it mean to develop students as stewards? What are the desired outcomes of the program?
- What is the rationale and educational purpose of each element of the doctoral program? Which elements of the program should be affirmed and retained? Which elements could usefully be changed or eliminated?
- How do you know? What evidence aids in answering those questions? What evidence can be collected to determine whether changes serve the desired outcomes?

## HIGHLIGHTS

- The second refers to students. Students must be responsible, active, intentional agents in their own learning.
- The third imperative involves both faculty and students. Real improvement must be a joint venture in which faculty and students are genuine partners.

### Apprenticeship Reconsidered

*The Formation of Scholars* focuses on what might well be called the “signature pedagogy” of doctoral education, apprenticeship.

The tradition of close work between a faculty “master” and student “apprentice” has its roots in medieval guild culture, which then took hold in the early university as well. This central relationship is not the only approach to graduate teaching and learning; there are courses, seminars and independent study. But apprenticeship remains a central experience. The question is whether it is serving the purposes most important to the formation of scholars in the twenty-first century, and the answer is that it is not. Students in many fields would greatly benefit from an alternative model of doctoral education in which apprenticeship is a shared function, and a reciprocal one, that fosters learning for both professor and student.

**CARNEGIE CALLS FOR MORE PURPOSEFUL, COORDINATED, MULTIGENERATIONAL FORMS OF MENTORING AND ADVISING, WITH GREATER COLLECTIVE RESPONSIBILITY FOR THE STUDENT EXPERIENCE.**

The solution is to reappropriate the term “apprenticeship” and urge it in directions more purposefully aligned with the vision of learning that is needed from doctoral programs today, combined with known ways to foster that learning. Carnegie proposes a shift of prepositions: from a system in which students are apprenticed *to* a faculty mentor, to one in which they are apprenticed *with* several mentors.

#### STRATEGIES FOR DEVELOPING GOOD APPRENTICESHIP RELATIONSHIPS

- Know one’s self and each other well.
- Communicate clearly.
- Provide regular feedback.
- Take time.

It becomes clear that the traditional apprenticeship model must be enlarged and modified to create a new signature pedagogy for the formation of stewards. Drawing from developments that are evident in some settings and disciplines but not in others, Carnegie calls for more purposeful, coordinated, multigenerational forms of mentoring and advising, with greater collective responsibility for the student experience.



## Intellectual Community

Intellectual community is not a difficult goal to embrace, but neither is it easily achieved. Many students report that the culture of their chosen program makes already daunting challenges even harder, and the difficulties are often felt most keenly by students of color and women, international students, and by those attending part-time. The goal, then, is to create environments in which all qualified students can succeed in the fullest way, becoming responsible stewards of their disciplines, academic citizens, and contributors to the larger society.

The benefits of a thriving intellectual community, however, go beyond the important goal of nurturing individual scholars. It also fosters the development of new knowledge by encouraging scholarly debate and intellectual risk-taking. Intellectual communities are not simply happier places to work; they are also

**INTELLECTUAL COMMUNITIES ARE NOT SIMPLY HAPPIER PLACES TO WORK; THEY ARE ALSO MORE EFFICIENT ENGINES OF KNOWLEDGE PRODUCTION THAN THEIR DYSFUNCTIONAL, ANTISOCIAL OR APATHETIC COUNTERPARTS.**

more efficient engines of knowledge production than their dysfunctional, antisocial or apathetic counterparts.

Clearly there are many ways to promote intellectual community. But the point is not simply to create occasions, but to ensure that

these actually foster the intellectual and professional development of graduate students as stewards. Simply proliferating activities won't necessarily lead to greater intellectual engagement and development. Rather, strategies must be linked to and evaluated in light of the outcomes they are intended to produce.

### CHARACTERISTICS OF INTELLECTUAL COMMUNITY

#### □ **Shared Purpose**

Purpose is more than a shared agenda for how to operate; it is a community-wide commitment to help students develop into the best scholars possible so that they, in turn, may contribute to the growth and creation of knowledge.

#### □ **Diverse and Multigenerational**

An intellectual community able to stimulate new ideas and development is one with an appreciation for the generative potential of multiple perspectives. Far from requiring agreement on everything, true intellectual exchange must include a wide range of opinions that can challenge and inform thinking.

#### □ **Flexible and Forgiving**

The most productive intellectual community is one that provides opportunities for experimentation and risk taking. Learning, after all, means making mistakes and testing inchoate ideas.

#### □ **Respectful and Generous**

Intellectual community is strengthened by close ties, and the general atmosphere ought to be civil, respectful and generous. Members of a vibrant intellectual community are generous with their time, ideas, and feedback.

## A Call to Action

No single charismatic leader, no one initiative or project, no solitary organization or group, and no one silver-bullet remedy can effect the kinds of changes required to take doctoral education productively into the future. What is needed, rather, is purposeful action on many fronts by a full range of actors—each of whom brings distinctive strengths (and limitations) as an agent of change. It is by combining forces that those who care about doctoral education can now move the enterprise forward. The message of *The Formation of Scholars* is less about particular innovations than about a commitment to the ongoing process of improvement: deliberating about purpose, asking questions about effectiveness, gathering evidence to shape improvements over time, and taking action.

Students and faculty can take individual action, and individual actions add up to collective cultural change. A learning-centered view of doctoral education means that every academic department should be a lively intellectual community, celebrating the advancement of learning and knowledge.

### Students

- Become involved in—and help lead—a process of self-study and deliberation about the doctoral program you are a part of: how it works, how well, and how it must change.
- Find occasions and intellectual communities in which you can engage the questions that should be fundamental for any scholar: Why do you want to study this field? What is it about the field that ignites your passion? What do you need and want to learn?
- Seek out powerful learning opportunities.
- Cultivate multiple mentoring relationships and look for ways to make their benefits reciprocal.
- Become involved: join a departmental committee, host a visiting speaker, or organize a seminar.

### Faculty

- Turn scholarly lenses on the experience of students.
- Have the difficult conversations about purpose.
- Come together with colleagues to say what you seek for your students.
- Use evidence to identify strengths and weaknesses of the program.
- Share results widely.

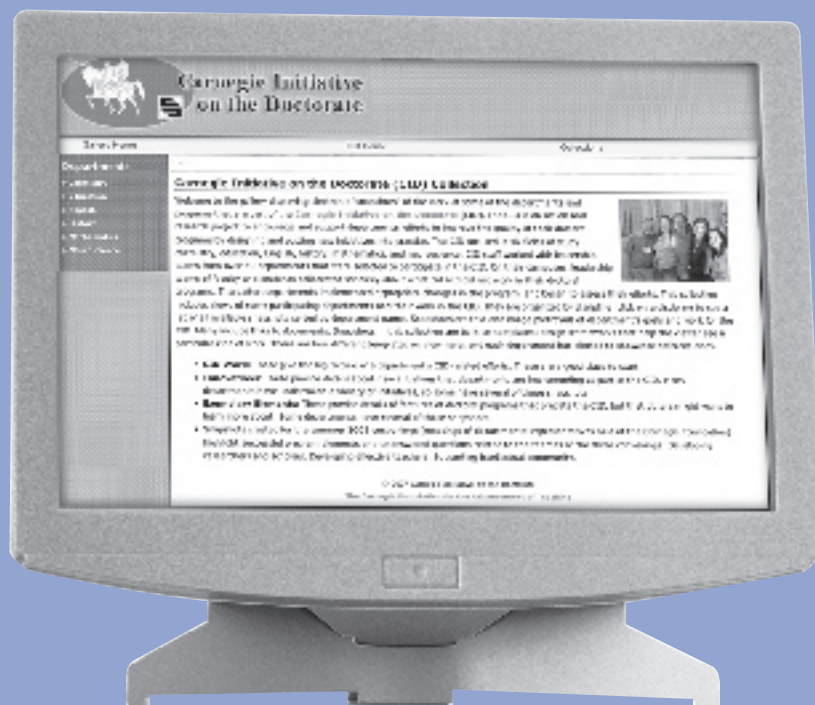
### University Administrators

- Send signals about the importance of the quality of doctoral education.
- Raise the profile of departmental improvement initiatives.
- Make good ideas from other settings available and visible.
- Look for ways to connect successful innovations in undergraduate programs to work at more advanced levels.
- Join national efforts.
- Bring resources and ask for results.

## THE CID GALLERY

Carnegie's vision of the change that is needed often takes the form of "existence proofs," examples of innovations and experiments that demonstrate things that can be done. Often useful examples exist in other disciplines, a lesson learned time and again in the CID. Carnegie created an online gallery so participating departments could display "snapshots" of their work, allowing information to be shared across disciplines. These snapshots are text and image portrayals of departments' goals as part of the CID project. Many include links to documents and other resources. The gallery is divided into four frameworks to help the visitor see a particular kind of work. The section on CID Work gives the big picture of departments' CID-related efforts. Snapshots in Innovations provide details about new initiatives. In the Elementary Elements section, snapshots provide details of features of doctoral programs that predate the work of the CID, but that others might want to learn more about.

<http://gallery.carnegiefoundation.org/cid/>



## Table of Contents

### THE FORMATION OF SCHOLARS

#### Rethinking Doctoral Education for the Twenty-First Century

Moving Doctoral Education into the Future

Setting the Stage for Change

Talking About Purpose: Mirrors, Lenses and Windows

From Experience to Expertise: Principles of Powerful Formation

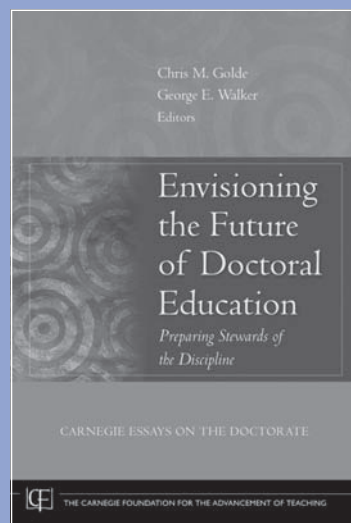
Apprenticeship Reconsidered

Creating and Sustaining Intellectual Community

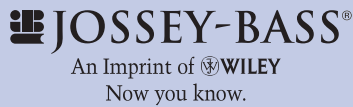
A previous CID publication, *Envisioning the Future of Doctoral Education: Preparing Stewards of the Discipline*, is a collection of 21 essays by leading researchers and scholars in the fields of chemistry, education, English, history, mathematics and neuroscience.

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