

*Teachers for a New Era*  
**Proposal**  
to the  
**Carnegie Corporation of New York**

from the  
**University of Washington**

**February 25, 2003**

## Introduction

The University of Washington is ready to reinvent the way it prepares teachers. Despite decades of dramatic social, cultural, economic, and intellectual changes, teacher preparation looks remarkably like it did fifty years ago. Yet we have learned a great deal from research about the dynamics of schools, classrooms and communities, learning, and what teachers need to understand and be able to do. We know also that teachers benefit from opportunities to integrate theory and research with clinical practice. Further, they must continue to learn across their careers, drawing from new knowledge and adapting to their ever-changing socially and culturally diverse classrooms. Teachers need support to continue learning after they graduate.

The University of Washington proposes to undertake all of these: redesign curriculum, expand contexts for learning, extend support to teachers beyond graduation, and then to evaluate results. To do this demands a restructuring of the leadership of teacher preparation, moving it from the exclusive domain of the College of Education to a University entity, the *Washington Center for Teaching and Learning*. Symbolically, this communicates to internal and external constituencies that teacher education is the responsibility of the entire University and its partner schools. Functionally, it provides an administrative “middle ground” where faculty from the College of Arts and Sciences (CAS), CE, other University units, and P-12 schools can collaborate to shape and delivery the program and evaluate their efforts. The Center will be led by the Associate Provost and co-directors from the Colleges of Education and Arts and Sciences (see Appendix A).

To ensure that we do not mistake good intentions for results, we will subject our efforts to the tough test of classroom results: at the end of the day, what are the P-12 pupils learning, and how has that changed? Analysis and assessment will be at the core of this effort. To continually review and renew the program, we will establish an Evaluation of Learning Team, as well as draw upon the expertise of an external evaluator.

The Washington Center for Teaching and Learning will develop the UW ***Sustained Teacher Education Program (STEP)***:

- ***STEP I:*** A five-year Teachers for a New Era preparation program to be collaboratively designed and taught by CAS and CE faculty, and P-12 teachers, culminating in both a BA and a Masters-in-Teaching degree.
- ***STEP II:*** A two-year induction certificate program that links emerging teachers with CAS and CE faculty, so they might continue to build their disciplinary and pedagogical knowledge, while also receiving context-based mentoring from P-12 Master Teachers.

The Center will support STEP through the following activities:

- Integrating into STEP new understandings about learning emerging from the cross- disciplinary field of learning science and the subject-matter disciplines.

- Providing a live video infrastructure to connect university and public school classrooms.
- Gathering, analyzing and evaluating existing research on pupil performance and teacher effectiveness to use as the basis for the continuing improvement of teacher preparation.

We believe that such a sustained system of support will significantly improve teacher quality, curb the costly attrition rate among new teachers, strengthen each contributing partner, and provide a fresh model for others.

Why the University of Washington? The University of Washington is particularly well positioned to achieve these goals for several key reasons. First and foremost, the University has built a culture of innovation and change that characterizes all levels of the institution, from the president and provost, to deans and department chairs to staff and students. The University Initiatives Fund and the Tools for Transformation program are signature UW programs that both foster and support interdisciplinary initiatives across campus. Since 1997 when the UIF was established, the UW has amassed considerable experience in implementing multi-unit change (see Appendix C). Most importantly for the *Teachers for a New Era*, the UW culture of innovation is grounded firmly in research and assessment, both as a philosophy and as a practice. Examples abound: both former president McCormick and current Interim President Lee Huntsman have successfully encouraged every unit on campus to take an active role in supporting P-12 education in the state of Washington by engaging teachers in research efforts and translating important new research findings into school practices. All of this has created the necessary foundation for realizing the goals set forth in this proposal.

Additionally, the University of Washington is poised to undertake these objectives because of the strong partnership that exists between the colleges of Education and Arts and Sciences, a partnership that will serve as the necessary foundation for realizing the goals set forth in this proposal. Of the 41 departments in CAS, over 30 already offer classes that address issues of K-12 student learning or teacher training. The recently revised CAS mission and goals statement includes a commitment to K-12 outreach (see Appendix E).

For the past two years, the College of Education, in collaboration with CAS and public school partners, has been building a continuum of support for teacher development from preservice through the first five years of teaching. Underlying this focus is the recognition that retaining talented teachers is the major personnel challenge in most high-need schools (Ingersoll, 2002; NCTAF, 2003). Such a view of teacher development necessitates a radical rethinking of the organization, curriculum, and pedagogy of teacher education.

Missing from all of this activity and genuine commitment has been a coherent vision and mechanism for integrating the work of the CE, CAS, and P-12 partners in teacher

education. Although literally hundreds of programs and dozens of classes are taught each year, no effort has been made to coordinate and direct these energies. CAS faculty who are directly involved in teacher education are too often marginalized within their departments. Moreover, the results of their research are not integrated into the broader scholarly and pedagogical discourse in CAS. Often isolated from others who share their commitments, these faculty lack opportunities to engage in meaningful conversations with colleagues in the field. Structurally, the teaching missions of CAS and CE have not allowed for a sustained engagement.

Through its partnerships, the Center will generate greater coherence among these disparate endeavors and foster new programs and research. It will do so through the development of joint faculty appointments, team-taught classes, and University appointments for P-12 teachers; increased presence of UW faculty in P-12 schools, colloquia and workshops designed to exchange expertise across the K-16 system; and shared evidence and research. The Center will also serve as a point of entry to the University of Washington for future P-12 teachers by providing a meaningful and sustained integration of current P-12 teachers into the study of learning. At its core, the Center will bring together the key partners necessary to prepare the kind of teachers our State's pupils deserve.

The University of Washington endorses the Carnegie principle that teacher preparation be based in research and evidence. The development of a sophisticated model for data gathering and analysis will be enhanced by UW's strengths in this area.

## I. Design Principles

### A. Decisions Driven by Evidence

The foundation of the new Center is a teacher preparation program built on evidence. This means: (1) drawing upon research to build the new program; (2) establishing a system to collect, analyze, and report data on graduates' effectiveness in their P-12 classrooms; (3) using these data to review and make changes in the program; and (4) integrating research explicitly into University courses and teacher induction. (See Figure 2 for an overview of the goals, processes, and organizational mechanisms.)

#### 1. *Drawing upon research:*

To genuinely infuse research on teaching, learning, and teacher education into the delivery of the program requires that those who design and teach the program have opportunities to evaluate and learn from the research. We do not assume that research "speaks for itself." Research presents information, of various degrees of credibility, that practitioners must interpret in light of their circumstances and experience.

Consequently, year 1 of the project will be devoted, in part, to the creation of Study Groups whose tasks include reviewing the relevant extant research, deriving design principles, and designing learning opportunities. The Leadership Team, working with the Center Fellows and graduate students assigned to each Study Group, will identify and organize the research relevant to the redesign task in each area.

In addition to the research on teacher education, another critical body of research is that on teaching and learning in the arts, humanities, sciences, and social sciences. For example, Lillian McDermott (1984), a UW physicist, has pioneered research on university students' misconceptions of mechanics that undermine efforts to teach them fundamental concepts in physics. Research of this type will be of particular interest as the Study Groups evaluate and redesign general education, academic major, and pedagogy courses and experiences.

In examining learning opportunities, the Study Groups will also address the issue of how to make underlying research more evident to students. This is critical not merely to help prospective teachers understand the research basis for what they are learning but to help them develop the basis for pedagogical content knowledge. A key dimension of pedagogical content knowledge is understanding where knowledge in a discipline comes from, how it is created or discovered, tested, challenged, and organized; i.e., its "syntax" (McDiarmid, Ball, & Anderson, 1988; Shulman, 1986; Schwab, 1977). We anticipate developing new courses in the major that examine these issues.

#### 2. *The role of pupil learning.*

The ultimate test of program quality is the effectiveness of graduates in helping K-12 pupils learn. Consequently, we plan to build a system to collect and analyze various data on P-12 pupil learning in the classrooms of STEP program graduates. Because such a system does not exist, we will be building this from the ground up with the Evidence of

Learning Team leading. We anticipate drawing on both the existing research on assessing student learning (e.g., Mislevy et al., 2002; Wiggins, 1998) as well as local expertise (e.g., CE faculty Cathy Taylor and Sue Nolen, authors of a new book on student assessment; and PETTT) in designing and implementing the system. The data thus collected and analyzed is then fed back to the Leadership Team and Study Groups to drive continuous program assessment and renewal.

Table 1 suggests the type of data we envision collecting, although examination of research during the first year will almost certainly change the data we plan to collect. We anticipate that we will rely on data from multiple sources to gauge pupil learning in graduates' classrooms. We also anticipate that we will begin to pilot such a system in years 2 and 3. To get an accurate reading of how the program affects graduates and their practice and, consequently, on their students' learning, we may have to wait until graduates have taught for some time.

In addition to establishing a system for collecting data, we will also create both statistical and qualitative databases to enable us to track teachers and their students over time. UW's Center for Statistics and Social Science has considerable experience in building large databases. These databases will also enable us to compare our retention and turnover rates with other programs in Washington State.

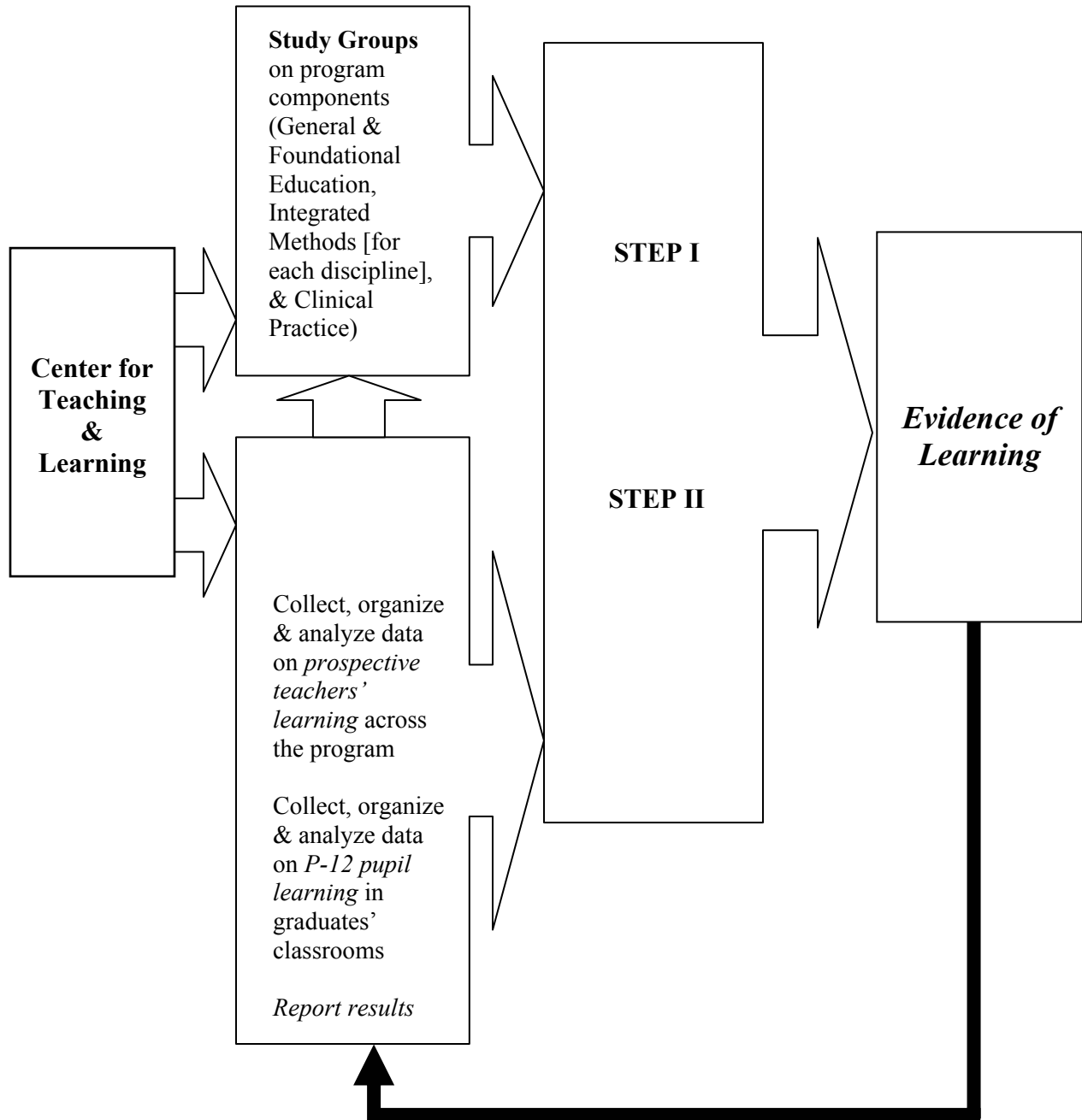
The challenge and complexity of developing such a system for P-12 learner data will require the expertise and creativity of a range of assessment specialists. Consequently, the Center will create an *Evidence of Learning Team* that draws on expertise from: the Center for the Study of Teaching and Policy (CE); the Center for Statistics and Social Sciences (CAS); assessment directors in partner districts; and CE faculty involved in a recently funded Rockefeller initiative to develop responsible accountability systems.

The *Evidence of Learning Team* (ELT) would meet periodically with the Leadership Team and the Study Groups to build a system for assessing the learning of STEP participants at different points in the program. The ELT would be responsible for carrying out the jointly designed data collection tasks.

**Table 1 Possible Data to be Collected on Program Participants and their P-12 Students**

Variables	Types of Data
P-12 pupil learning	<ul style="list-style-type: none"> <li data-bbox="691 346 1310 443">– Results on standardized tests, including the state assessment (collected in ways to protect the privacy of students and teachers)</li> <li data-bbox="691 464 1292 527">– Samples of student work, including classroom-based assessments and daily work</li> <li data-bbox="691 548 1219 611">– Classroom videos of students working in classrooms with teachers and classmates</li> </ul>
Prospective teachers' learning	<ul style="list-style-type: none"> <li data-bbox="691 634 1256 663">– Surveys of prospective teachers' knowledge</li> <li data-bbox="691 684 1167 714">– Interviews with prospective teachers</li> <li data-bbox="691 735 1317 831">– Evaluation of teaching tasks, e.g., lesson and unit plans, student assessment, and classroom management</li> <li data-bbox="691 852 1305 915">– Evaluation of prospective teachers' responses to teaching scenarios (Ball &amp; McDiarmid, 1991)</li> <li data-bbox="691 936 1273 966">– Videos of prospective and beginning teachers</li> <li data-bbox="691 987 1261 1050">– Web-based teacher logs to describe teaching practices (Ball et al., 1999)</li> <li data-bbox="691 1071 1279 1161">– Scores on the Washington State WEST-B and WEST-E (i.e., basic skills &amp; subject matter teacher tests)</li> </ul>

**Figure 2**  
**Evidenced-Based Teacher Preparation**





## B. Engagement with the College of Arts & Sciences

### *1. Subject matter understanding*

Too often, preservice teachers who major in a discipline fail to develop the knowledge of the subject matter they need to teach (NCRTL, 1991). Neither the disciplinary major nor the subject-specific methods courses serve them well. The Teacher Education Program at the UW includes this kind of knowledge in its methods courses, and introduces students to the concept of pedagogical content knowledge in the first course they take. But prospective teachers do not encounter subject-specific methods courses until they have completed their disciplinary major. Thus, they have to retrospectively reconfigure their knowledge about their discipline in a completely new way—no mean feat.

Majors: The innovation we propose is to reconfigure the academic majors required of STEP participants to include opportunities to learn about the relevant state standards and syntactic as well as the substantive knowledge of the subject matter (Ball & McDiarmid, 1991; Shulman, 1987; Schwab, 1977). During the first year, Study Groups on Integrated Majors and Methods in mathematics, history, and biology will undertake to compare the major for teachers in the fields with the state standards to identify gaps and to develop new courses that help students learn both the history and syntax of the field. In subsequent years, Study Groups for each of the fields for which methods are taught will meet to compare requirements for the major with the state P-12 standards. The goals of the Study Groups are to: (1) reconfigure academic majors to better prepare teachers who will be responsible for teaching the standards; and (2) develop a shared definition of pedagogical content knowledge and how best to ensure its development.

Methods: The innovation we propose is to involve Arts and Science faculty in co-teaching subject-specific methods with CE and P-12 colleagues. The benefits are obvious: Not only will this heighten the importance of subject matter in the methods experience but CAS faculty who participate become bridges to their academic departments. They can become advocates for teacher education and their heightened awareness of pedagogical issues can help shape instructional and curricular decisions in the CAS. To create incentives, we will use project funds to provide course releases for CAS faculty to plan and co-teach. These faculty will mostly likely be recruited from the Study Groups for each discipline.

Clinical Practice: The innovation we propose is to involve Arts and Sciences faculty in the supervision of interns and beginning teachers. To facilitate CAS faculty participation in supervision, we will pilot communication systems—particularly, ConferenceXP—that would enable faculty on campus to view interns and novice teachers in their classrooms. CAS and CE faculty who are co-teaching methods could observe the intern teacher together and, subsequently, have a conference with the intern and the on-site mentor.

School Residencies: The innovation we propose is to place UW faculty, from both CAS and CE in partner schools. These appointments can be for up to a full year but not less than a quarter. P-12 teachers and administrators will work with the faculty member to

determine their roles. Such residencies would offer Arts and Science faculty opportunities to work with interns, novice teachers, as well as veteran teachers and P-12 pupils.

## 2. *General and Liberal Education*

We envision graduating liberally educated teachers who represent their profession well, are prepared to participate in the civic life of a democracy, and understand the larger historical and cultural context for teaching, learning, and schools. During year 1, a Study Group consisting of CAS and CE faculty, and P-12 teachers will meet monthly to define: (1) what research reveals about the general and liberal education of teachers; (2) how and where—i.e., through which courses and experiences—teachers can develop such knowledge, skills, and dispositions; and (3) how to evaluate whether or not prospective teachers are liberally educated.

In year 2, the Study Group will develop and put in place new General Education courses for teachers. These could include courses on the education and democracy, the high school experience in American history and culture, and recent developments in the learning sciences.

Literacy and Numeracy: Another key issue the Study Group will examine is the development of literacy and numeracy skills during General Education courses. If teachers are to help their students develop these skills, they will need specifically designated opportunities to hone their own skills across their university careers. The CAS is currently examining the opportunities undergraduates have to develop their writing skills. Building on this work, the Study Group will, in year 1: (1) delineate the literacy and numeracy skills teachers need; (2) review relevant research on the teaching and learning of literacy and numeracy; (3) identify where in the current general education curriculum students can develop and refine these skills; and (4) develop recommendations to the CAS on how to improve the teaching and learning of literacy and numeracy. In year 2, the Study Group will work with instructors of targeted General Education courses to increase attention to literacy and numeracy issues in these courses.

## C. Teaching as an Academically Taught Clinical Practice

### 1. *Pedagogy*

While teachers deal in specifics—particular students learning particular content under particular conditions—many of their decisions rest on their general, theoretical understandings of the learning, learners, subject matter and curriculum, instructional strategies, milieu, and their roles and responsibilities—the “commonplaces of teaching” (Schwab, 1977). Consequently, teacher preparation must address both specific practical skills and general, theoretical knowledge derived from research, and also how to use theoretical knowledge to inform practice (Dewey, 1932).

We plan to ensure that participants in the STEP program experience a reciprocal process in learning pedagogy. That is, the program will provide opportunities to develop and practice pedagogical skills in partner schools: planning and developing curriculum, using

various instructional strategies, assessing pupils' initial knowledge and their learning, but also how to evaluate practice using what we have learned about effective pedagogy.

We will address two pedagogical issues that are either ignored or inadequately treated. They are (1) helping beginning teachers develop classroom management skills; and (2) ensuring that recent research on learning underlies both academic course work and clinical practice.

In year 1, the Study Group on Clinical Practice and Induction will examine the research and make recommendations on how to address the issue. Beginning teachers need more help in lesson planning, year long planning, watching how children learn in order to make programmatic adjustments. They need more time learning how to move children from one activity to the next. By moving much of the foundational material to the undergraduate degree, more time will be freed during the 4<sup>th</sup> and 5<sup>th</sup> years to focus on ensuring that teachers will be successful in their first two years.

We will create courses in learning sciences as prerequisites to program admission as well as requiring a course on cognition in the program.

The program will also provide opportunities for prospective teachers to develop knowledge and understandings of:

- (1) The historical, philosophical, sociological, and political context in which teaching, learning, and schooling occur.
- (2) Curriculum development.
- (3) The cognitive, psychological, physical, and social development of adolescents.
- (4) Multiple instructional strategies.
- (5) Continuous assessment of pupil learning.
- (6) Collaboration with colleagues and families.

As described above under Decisions Driven by Evidence, the Evidence of Learning Team will collaborate with the relevant Study Groups in building a system to collect, analyze, and report data on prospective teachers' learning as they progress through the program. This is made challenging by the nature of learning itself: changes in thinking occur over time and represent a mélange of influences and sources (Bransford et al.. 2000).

## *2. Schools as Clinic*

As the analysis above suggests, we will rethink the relationship between knowledge and skills learned in the university classroom and classroom instructional practice. Partner schools are critical players because they offer clinical sites in which interns can develop their practical skills in the company of accomplished practitioners.

Our goals for the STEP program that address "teaching as an academically taught clinical practice" include:

- (1) *Greater integration of methods and clinical practice:* A primary focus of the Integrated Majors and Methods Study Groups during the first year will be to better integrate pedagogical methods with clinical experience. This will enable prospective teachers more opportunities to think about how what they are learning in their teacher education courses can inform their instructional practices—and to do this under the guidance of both university faculty and accomplished P-12 teachers. This also suggests that teachers in P-12 partner schools need opportunities to rethink their role in prospective teachers' learning and development.
- (2) *Develop partner schools as professional learning sites:* Consequently, a major effort during year 1 will be collaborative work with partner schools to develop their capacity to support both interns and beginning teachers during their first two years. This will require time for the P-12 teachers and principals to work with colleagues from other partner schools and the University as well as to collaborate with one another.

An innovation we will introduce in secondary partner schools is to designate departments, rather than individual teachers, as mentors. This arrangement allows interns to observe and teach with several teachers, exposing them to multiple teaching styles, environments, and grade levels.

A school-university liaison will be appointed from among the teachers at each partner school. The liaison's job includes, in collaboration with the principal, addressing issues that are fundamental to both P-12 student learning and to the learning of interns and beginning teachers. These issues include:

- How to maintain a focus on student learning.
- How to assess student learning and use data to drive curriculum and instruction.
- How to ensure that the highest-need students receive the necessary opportunities to learn.
- How teachers interact with one another and others in the environment.
- How teachers define their collective work.
- How teachers talk about instructional practice.
- How teachers induct new members.
- How teachers support the development of interns, novices, and veteran colleagues.

Recognizing that teachers are reluctant to leave their classrooms, even for the worthiest of reasons, we plan to hold a Partner Schools Institute each summer. Teams of teachers from each school will receive stipends to attend. UW

faculty involved with the program will also attend. Each school will be expected to produce a plan that indicates how they will use resources from the project and other resources to achieve goals related to the above issues. University faculty will serve as “critical friends” for each school team. A major activity will be analyzing and disaggregating P-12 student learning data as a basis for designing improvement activities. In addition to addressing the issues identified above, the Institute will include training in such areas as mentoring, leadership, subject-specific instructional design, and professional culture building.

(3) *Creation of Partner School Council (PSC)*: This Council, under the aegis of the Center, will provide teachers and principals with a forum in which to exchange and develop ideas about developing professional cultures and collecting and analyzing data on student learning. In addition to P-12 educators, the Council will include both CAS and other faculty, especially those with residencies in the schools. During the first year, the Council will meet monthly; subsequently, it will meet quarterly. In addition, each summer the PSC, in collaboration with the UW’s Center for Educational Leadership and the Center for Teaching and Learning, will plan the Partner Schools Institute.

### 3. *Teachers on faculty appointment:*

The project will create several new roles for teachers including:

- Co-teaching courses with CAS and CE faculty.
- Cooperating teachers within department groups working with practicing teachers.
- Mentors for first and second year teachers.
- Seminar leaders for cooperating teachers and mentors.
- Portfolio reviewers.
- Professional development study group leaders.

Undoubtedly other roles will arise as the project proceeds. In year 1, teachers will be involved in the Study Groups and, by year 2, will be co-teaching courses in General Education, Methods, and seminars connected to the internship.

Further, the staff of the Center for Teaching and learning will include a Teacher in Residence (TIR) beginning in year 1. The role of the TIR will be to: 1) represent the interests of P-12 teachers in the leadership of the center; 2) communicate with P-12 educators about the work of the center; 3) recruit P-12 colleagues for the center; and 4) help develop the center’s research agenda.

We have proposed three distinguished P-12 educator roles in the CE as part of our capital campaign; we hope to have built endowment funds that will allow us to support these

positions in the college each year on a full time basis. The Distinguished Educators will sit in the CE full time, on a rotating basis. Their purpose will be to (1) participate in the design, review and improvement of the methods-clinical practice experience; (2) bring a public-school perspective to the general work and governance of the college; and (3) teach new courses of their own creation.

#### *4. Residency (induction)*

The two-year induction component includes three learning opportunities: in-person, on-site mentoring by trained, accomplished practitioners; on-line and teleconferencing student groups led by CE and CAS faculty; and initial and on-going training for mentors. Our goal is to have the system in operation by the second year of the project. Initially, we intend to serve about a third of our graduates. After the system is fully built, we anticipate being able to serve all of our graduates.

During year 1, we will pilot an induction program for our graduates in Seattle schools. Activities for partner schools include an intensive seminar on departmental mentoring, a summer seminar focused on building professional community and culture, and a workshop in which faculty from the partner schools work with colleagues in other schools on mentoring beginning teachers. We will also collect data on the experiences of graduates as beginning teachers and on the mentors and mentoring departments to evaluate the effectiveness of the support program.

During year 2 of the project, we will use the data from the pilot, as well as other research on mentoring (Wang & Odell, 2002), to determine how to modify the model and extend it to a second year. The Study Group on Clinical Practice and Induction and the Partner School Council will work with our business partners to pilot the use of ConferenceXP to enable both online observations and mentoring. The goal is to create a system that will enable graduates to have periodic, individual or group mentoring sessions with both CAS and CE faculty during their first two years of teaching. These monthly sessions will focus on beginning teachers' issues and the individual or group inquiry projects they will develop. The projects will be part of a graduate course taught by UW faculty—including clinical faculty—leading, after two years, to a Certificate of Instructional Mastery. This course will also articulate with the Professional Certification program that UW recently developed in response to a state policy (see Appendix D).

In year 2 we will also use what we have learned to inform the Mentoring Seminars that will be part of the Partner Schools Institute with follow-ups during the school year. The project will support the participation of mentors and administrators from non-partner schools where UW graduates have historically taken jobs. The agenda of these seminars will include: (1) research findings on effective mentoring and teacher learning; (2) models of successful mentoring; (3) participative simulations of mentoring; and (4) the school culture and structures needed to support successful induction.

During the years 2 and 3 of the project, we will provide face-to-face and online conference mentoring to approximately 60 of our graduates per year. We will employ local mentors, whom we will train on line, in the schools where our graduates teach

during their first two years to provide face-to-face mentoring. The Evidence of Learning Team will assess the effectiveness of the model and make recommendations to the Study Group on Clinical Practice and Induction on how to refine this component and take it “to scale.”

#### 5. *Preparation of candidates for professional growth:*

Prospective teachers in STEP will begin building an electronic portfolio in their General Education learning sciences course (see below, “Pedagogical Content Knowledge”). A key part of the portfolio will be a Learning Plan in which they identify learning goals and plans for achieving those goals. As they take additional courses with an educational focus and courses in the STEP program, they will update their Plan. A primary topic in the last quarter of the reflective seminar that will accompany the year-long internship will be transforming their Learning Plan into the state-required Professional Learning Plan. This will provide interns with an opportunity to assess their own knowledge and skills, based on evaluation of student work and the assessment of their mentoring team, and to identify areas in which they believe they will need additional support and learning.

Appendix F shows the continuum of teacher learning as we envision it and are institutionalizing it. Appendix D shows the sequence of experiences that leads to a professional growth plan and professional development leading to the Professional Certification in Washington. (This corresponds to the fourth box on Appendix F, “Professional Growth Plan, Years 3 & 5.”) Post-induction activities include seminars to assist teachers in developing career growth plans and connecting teachers with research activities at the University. The latter provide teachers with opportunities to experience the application of the subject matter they teach in research settings. For instance, teachers may join a team of biologists who are studying the interaction of habitat and population fluctuations among salmon.

Teachers may elect during this professional growth planning to prepare for National Board for Professional Teaching Standards. As an expression of its commitment to supporting teachers’ learning and development across their careers, the CE has in place a program to support teachers in preparing for NBPTS certification.

## **II. Issues to be Addressed Jointly by Faculties in CE and in CAS**

Our vision of the STEP necessitates that we focus on pedagogical content knowledge, technology, and cultural considerations in teaching and learning during the first two years of the project. These are areas in which UW has considerable prior experience on which to build. Other issues, such as literacy and numeracy, we will begin to address but do not envision implementing until later in the project.

### **A. Pedagogical Content Knowledge**

*Pedagogical content knowledge* is the foundation of the new STEP and the primary area of collaborative work between CAS and CE. We envision graduating teachers who

possess the deep, flexible understandings of the content necessary to help students from diverse backgrounds develop similarly deep understandings, consistent with the Washington State academic standards.

The key design idea in the STEP is to ensure that prospective teachers become aware of the multiple dimensions of subject-matter knowledge early enough in their university experience so that this awareness frames their various encounters with disciplinary knowledge. To this end, we propose to

1. Create a course in learning sciences for Freshmen and Sophomores. Among other things, this experience will help prospective teachers develop a critical framework for pedagogical content knowledge that they can apply during their subsequent studies.
2. Create new courses in academic majors that highlight the syntax, history, and “terrain” of the discipline. We discussed these above under “Increasing Arts and Sciences Engagement.”
3. Redesign study of learning science in the STEP. A central focus of the course is pedagogical content knowledge—what it is and how it is created.
4. Integrate pedagogical methods and internships. To further strengthen the development of pedagogical content knowledge, preservice teachers in the STEP would take their methods course concurrently with their clinical internship.
5. Residency: As part of the residency program, teachers during their first two years will be asked to videotape a class to view with their mentors and colleagues (see “Residency” above).
6. Conduct research on the effectiveness of these approaches to improving teachers’ pedagogical content knowledge. We envision a research program in which we collect data on teachers’ developing pedagogical content knowledge.

Introducing the concept of pedagogical content knowledge early in prospective teachers’ university careers and subsequently following up on this idea in learning science, methods, clinical practice, and induction experiences greatly increases teachers’ opportunities to develop their repertoire of subject matter representations. In addition, as Figure 2 indicates, teachers will have continuing opportunities to increase the depth and breadth of their subject matter knowledge, the *sine qua non* of pedagogical content knowledge. Research on participants will inform the Study Groups’ reviews of both CAS and STEP courses and experiences.

## B. Technology

The first task we will undertake is to clarify the skills and abilities that prospective teachers need to assure that all students learn. To that end, the Center will examine University, state, and national standards in technology. From these sources, we will map



the practical skills teachers need to develop before and during STEP. To help build some of these skills, prospective teachers, beginning in the freshman year, will build an electronic portfolio of significant work and their Learning Plan (see above, “Preparation for Professional Growth”).

A second use of technology is inspired by new developments at Microsoft. We intend to build a system that connects P-12 schools to University classrooms and to have enough of the system in place to pilot this in year 2. This will enable, for instance, UW students to study equity as it plays out in schools, by conducting a teleconference with a sample of middle schools that have contrasting policies on student tracking. During the first year of induction, CAS faculty will be able to watch a science lesson taught by a new STEP graduate and debrief that lesson with all participants. We believe that these connections might actually help us to radically transform our methods courses.

### C. Cultural Considerations in Teaching and Learning

Finally, if *cultural considerations* are to be woven into teachers’ planning and decision-making, we must ensure that they learn to teach in schools that enroll students from a variety of cultural groups. Learning under these conditions with support from university and school mentors significantly increases their confidence, knowledge, and skills necessary to succeed with culturally, ethnically, racially, and linguistically diverse students.

The STEP will draw on the research conducted in the Center for Multicultural Education within the CE. The work of Jim Banks, Geneva Gay, and others on multicultural issues, curriculum, and pedagogy will inform the program. Specifically, courses that they develop will be a prerequisite for admission to the program.

In addition, the learning sciences courses both in General Education and in the STEP (see the “Dilemmas in Teaching and Learning” course described under “Decisions Driven By Evidence”) will address the issue of how social, cultural, and ethnic differences influence learning.

Although the STEP will address the academic dimension of multicultural education, we plan to concentrate equal attention on the clinical portion of preservice teachers’ experience.

- By recruiting high-need P-12 districts and schools as partners, we will provide program participants with classroom experiences teaching pupils who are socially, racially, ethnically, and linguistically different from themselves.
- Interns will attend reflective seminars every two weeks led by local P-12 teachers and graduate students. In addition to discussing interns’ experiences, these seminars will examine relevant research on multicultural pedagogy.
- To forge stronger connections between academic courses and clinical experiences, reflective seminars will accompany the internship and will be co-taught by P-12

teachers and University faculty. These seminars will concentrate on motivating and communicating with racially, socially, and culturally diverse K-12 pupils. In addition to discussing interns' experiences, these seminars will examine relevant research on multicultural pedagogy.

- Each intern will also be assigned a “community mentor.” This mentor will meet periodically with the intern to discuss local events and concerns, appropriate communications with families, and to answer intern’s questions.
- Because of the critical role that elders play in many communities, we also will create Elders’ Councils for each of the partner schools. Interns will meet with the Council prior to beginning their internship to learn about the expectations, concerns, and values of the various communities whose children attend the partner school.
- Our research on program participants will also include collecting data on participants’ understanding of the role that cultural differences play in teaching and learning. As part of our periodic interviews with a sample of participants, we will include scenarios designed to elicit teachers’ thinking about cultural issues in the classroom (McDiarmid, 1991; McDiarmid & Price, 1992)

#### D. Literacy/Numeracy Skills

As we indicated under “Engagement with the College of Arts and Sciences,” the Subcommittee on General Education and Foundation Studies will assess how well current requirements address prospective teachers’ literacy and numeracy skills and develop new opportunities as needed. We envision teachers at all levels prepared to help their students with literacy skills—decoding, comprehension, writing, speaking, and listening.

Although many elementary teachers appear to accept that teaching literacy and numeracy as their responsibility, regardless of the subject under study, secondary teachers are less inclined to do so. As a consequence, literacy and numeracy consultants will work with the Majors and Methods subcommittees to help the subject-matter experts identify opportunities in the program curriculum to teach literacy and numeracy skills. In addition, these consultants will be funded to work directly with preservice teachers in the subject-specific methods, especially when they are developing and teaching units in P-12 classrooms, to help them identify and practice appropriate literacy and numeracy instructional strategies. By collecting and analyzing student work, interns can learn to assess the effectiveness of the strategies. Because UW claims few experts in these areas, the program will rely heavily on Clinical Faculty in partner districts, the Washington Writing Project to serve in consultants roles.

#### E. Elementary and Middle School Education

One of the subcommittees during the first year will examine data on the academic preparation of elementary teachers (described under “Decisions Driven by Evidence”).

This subcommittee, like the others, consists of CAS, P-12, and CE faculty. Specifically, the subcommittee will attempt to answer the following questions as a basis for making recommendations:

- What does research suggest about what elementary teachers need to know, be able to do, and care about?
- When, where, and how does research and experience suggest this knowledge is best learned?
- How do we address the need to prepare elementary teachers who possess the depth of disciplinary knowledge critical to effective pedagogical content knowledge but are also prepared to teach the full elementary curriculum?
- Given both state standards and research on the pedagogical content knowledge of elementary teachers, what opportunities to learn do elementary teachers need?
- Which of these opportunities currently exist and which will need to be developed?
- Which of these opportunities lend themselves to clinical experiences?
- Do new inter-disciplinary programs need to be developed? If so, how do we ensure elementary teachers also develop in-depth disciplinary knowledge?
- Can currently existing inter-disciplinary programs be reconfigured to address the needs of prospective elementary teachers?
- How will we know if elementary teachers are learning what we believe they need to know?

We envision that addressing these questions will require at least the first year. Consequently, during year 2, we will begin to implement the recommendations of the subcommittee.

We anticipate following a similar procedure for middle school teacher education. A subcommittee will begin to examine the questions during year 2 with the goal to implement the recommendations during year 3. These questions will parallel those the elementary subcommittee will address.

#### F. Recruitment of Under-Represented Groups into Teaching

Our efforts to recruit more students from under-represented groups into teaching hinge in large part on our partnerships with community colleges in the Seattle metropolitan area. Our collaborative plans with community colleges include jointly offering courses that community college students would need to enter UW and be prepared to follow the teacher education pathway. For instance, the learning science course we described above designed to make students more meta-cognitively aware of their experience as learners in their general education courses and to provide a framework for understanding the pedagogical content knowledge of their instructors would be also offered on the partner community college campuses. Similar arrangements would be made for core CAS courses.

We also recognize that among the challenges that students from under-represented groups face on a large research university campus are social and cultural. Where do they fit on a campus and in a culture where most other people do not look like them? Consequently, this will require the Partnership to work closely with student services on the UW campus to provide the support these students will need to be successful.

By creating a pathway to teacher education from the freshman year and admitting students to the program in the third year, the STEP will be able to attract more students from under-represented groups on the UW campus. The program will work collaboratively with academic programs such as those in American Ethnic Studies and American Indian Studies to recruit prospective teachers and establish curricular variations that will

We also have begun discussing with Seattle Public Schools building career ladders for instructional aides who could begin matriculating while they continue to work. As many of these aides are single parents from under-represented groups, they face a number of obstacles. Consequently, we will pursue plans for a program that includes community colleges as a vehicle for some of the aides to begin working toward admission to the STEP.

#### G. Late Deciders in an Undergraduate Program

Late entry candidates would be evaluated to determine their readiness for the full-year internship. This could include awarding credit for life experiences. The Coordinating Council will consider such a system and investigate how other institutions have addressed the issue. Candidates could use the two terms prior to the beginning of the year-long internship to get the experience in schools or additional academic preparation they might need to be ready for the internship. We anticipate being able to accept late-deciders in year 2.

### **III. Conclusion**

Both the narrative and the budget reflect the fact that we are requesting no funds for the considerable time that the Associate Provost and the deans of Arts and Sciences and Education will devote to this project. This represents the deep commitment of the University of Washington to the goal of reinventing teacher preparation. Our traditional strengths in research, teacher preparation, and curricular and institutional innovations will stand us in good stead as we undertake this project. Our goal extends beyond producing excellent teachers: We intend to be a model and a resource in our region for more integrated and thoughtful approaches to educating and supporting teachers.

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- Appendix B: Teachers for a New Era: Stepping up to the Future (Vision Statement)
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