CHAPTER 5.

FORTY YEARS OF WRITING EMBEDDED IN FORESTRY AT NORTH CAROLINA STATE UNIVERSITY

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By design, the WEC approach works across an entire institution; a program is established and then, one by one, individual departments are enlisted to engage in the process of transforming their curriculum, faculty, and approaches to supporting student writing. In contrast, this chapter chronicles the development of a WEC program in a single department at North Carolina State many years before a campus-wide system was put in place. The success of the effort depended on the presence of a writing expert who served the role of a WEC coordinator embedded in the department and who eventually became one of its own faculty through the acquisition of a Ph.D. in the discipline. Development of the WEC approach in this single department subsequently contributed to the reformulation of the accreditation standards for the discipline and the creation of the first campus-wide WEC program in the U.S., the Campus Writing and Speaking Program.

The idea of developing an embedded writing program within North Carolina State University's Department of Forestry was born in a Douglas fir (*Pseudotsuga menziesii*) stand in northern Idaho in September 1975. When forestry technicians with whom I was working asked me what someone with a masters of arts degree in English (earned the previous spring) could do, they also mentioned that none of their forestry professors provided comments about their writing. Born during that lunchtime conversation was the idea to assist faculty to address writing in technical disciplines. A month later when hired to substitute in the English department at the University of Idaho, I began asking composition students about how much attention to their writing they received in classes outside mine. The answer then, 1975–1976, was none and I recognized a gaping hole existed in higher education.

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Awareness of the writing gulf was dawning in the wider composition community, as Emig (1977) and Halloran (1978) articulated. However, typical institutional responses focused on creating writing centers housed in English departments and staffed by composition faculty, graduate students and undergraduate tutors. Sometimes such centers operated independent of English departments but the dynamics were the same: students required to write in various departments visited the "writing professionals" to have their syntax aligned and grammar adjusted. Professors in their majors were often not involved. Colleagues in the composition and communication ranks in the Department of English at NC State were aware of trends in the discipline, but the institution's response remained steadfastly insular, and no writing center or outreach to the rest of the university occurred.

This chapter chronicles the origins of a departmentally-embedded writing program at North Carolina State University that paved the way for an institution-wide WEC program. It traces how the forestry faculty embraced a proposal coming from outside their department but sensitive to compelling attributes of their discipline, following the principles described in the Introduction to this volume: faculty-owned, disciplinarily defined, data-driven, mediated by a writing expert, etc. It explores how preliminary and ongoing observations, colleagues' instructional experimentation, and the department's pedagogic flexibility enabled a realistic and unique approach, parts of which other forestry and natural resources programs would adopt. The chapter contextualizes development of forestry's writing-enriched curriculum amidst the institutional search for answers to a widespread instructional need. It recalls steps in NC State's process toward creating the institutionally unique approach that centers this volume. It demonstrates that a committed group of instructors led by an appropriately focused WAC-oriented faculty member could create something impactful despite, at that time, the lack of a systematic university program.

A FORESTRY FACULTY ENCOUNTERS AN IDEA

From 1975, fast forward through several years when I taught freshman composition at North Carolina State University, transitioned to teaching technical communication courses, and developed salient university contacts outside my employment in the Department of English. Douglas Frederick, a friend and forestry faculty member, in particular appreciated my perspective on the problem. Several forestry students electing to take my technical writing classes also encouraged my thinking. During the summer of 1978, I approached my department chair, who permitted me to make inquiries in the School of Forestry about the proposal I had been formulating since 1976. The dean of the School of Forestry and his associate dean for academic affairs listened as I laid out a

scenario for addressing a problem I perceived they faced. I did not know until later that the dean possessed a letter earlier sent to him by a forest company executive complaining about inept letters he was receiving from senior forestry students seeking employment. At the end of our conversation, the dean escorted me down the hall to meet the head of the Department of Forestry who recommended we arrange a seminar during the fall semester to discuss my proposal with the faculty. Subsequently, the forestry department offered to pay part of my salary to begin working with their senior classes to improve students' ability to communicate their forestry knowledge in writing.

Thus, in the spring of 1979, I sat in the senior capstone course in a technical curriculum working alongside faculty producing the next cadre of professional foresters. I knew relatively little about their technical demands, even less about the education that preceded this capstone course or components integrated in an effective forest management plan. Pragmatists, the forestry faculty said they expected me to observe and learn before I started tinkering with the process. That is how the WEC effort in the Department of Forestry at North Carolina State University began. I started sitting in on senior forestry course lectures and going to the forest with classes to experience their culture and to learn what students needed to communicate. As other authors in this volume underscore, success in this early stage was a matter of collaboration, consulting with forestry pedagogical experts, to tweak what they were already doing and strengthen the rhetorical context students would have for what they produced. I did a few invited lectures about general principles of technical communication, in the context of whatever assignment the professor was requiring, but I avoided prescriptions and tried to take my lead from the professor's instructions. I was learning as they were leading themselves toward my way of thinking about the place of writing in their process.

Overall, the forestry faculty expected students to hit a target. Requiring a forest management plan from students in the senior planning course the last semester of their tightly structured curriculum, faculty members expected that document to demonstrate comprehensive forestry knowledge. Each student produced his or her individual document based on team effort gathering and analyzing inventory data. The plan's audience, a hypothetical landowner, would be basing decisions on recommendations provided by the plan's author. The rhetorical situation seemed straightforward. It was embedded in a complex technical problem for which four years (including an intense summer of fieldwork) in science and technical courses prepared the authors. However, as I commented years later (Blank, 1988),

> most plans were not aimed at appropriate audiences. They were badly worded, were expressed in forestry jargon or tech-

> nical slang and assumed that readers (professors, of course) would understand what was omitted. Grammatical barbarisms and weak sentence structures distracted readers and made concentration on content difficult. In short, many seniors still wrote as if they were freshmen, except with technical ammunition to dispense in their ill-targeted shotgun style.

My experience teaching students in English department technical communication courses showed this was too often the case across the university.

The problem laid out before the deans and again for the forestry faculty during the seminar was the pervasive problem I had recognized in 1975. Academics assumed freshman composition could fix years of bad habits and teach an immutable set of rules to apply when writing anything. The gap between writing as then taught in English classes and the teaching practiced in technical courses, whether the subject was geology or forest genetics, remained. Focusing on forms and structure such as the argumentative essay that most composition introductory courses required did not translate well to data-driven science reports that forestry professors wanted. Writing about poems or dramas or short stories, the subject of literature-composition courses, was even farther from the communications reality that would face forestry graduates. Not knowing what to think about a poem, a first-year student would struggle writing anything; not wanting to think about a short story, most university students could not understand why they should write about it.

The main assumption I made and forestry faculty could buy was that students studying forestry would most likely care about communicating forestry they were learning and care about connecting with audiences who needed their information. Matters of style and diction pertaining to technical context changed the conversation about writing. Simple declarative sentences should dominate. Ornately sophisticated syntax caused problems for readers. Jargon needed definitions. Grammar and diction and punctuation errors should not distract from the message. In this context, I realized I needed to alter some of my own stylistic and rhetorical proclivities—learned in graduate literature courses writing papers for professors rather than practitioners outside the academy.

Note that I did not teach a writing course in the Department of Forestry, and the faculty did not add a technical writing requirement to the curriculum. In fact, for two and a half years, the Department of Forestry only paid one quarter of my salary, and I continued teaching technical communication courses in the Department of English through 1981. However, the School of Engineering asked me to help create a Writing Assistance Program (WAP) in January 1980 and bought half of my time from the Department of English. This arrangement

persisted until May of 1981 when, no longer eligible for employment in English, I accepted the dean's offer to hire me in the School of Forestry and split my salary with the School of Engineering. This lectureship with split employment renewed annually until 1988 when I passed preliminary examinations to begin research for my dissertation in forestry.

FORESTRY PROGRAM DEVELOPMENT AFTER 1981

My joining the forestry faculty changed the commitment everyone had to this writing across the curriculum effort. From the first-year introductory course to the senior capstone, we agreed on the goal of preparing students to be professionals who knew how to communicate their knowledge. I had become what Flash (Chapter 1), Luskey and Emery (Chapter 4), and Scafe and Eodice (Chapter 11) in this volume variously describe as someone with "insider-outsider" status; but in this case, my "insider" status would also strengthen as I became a member of the discipline of forestry.

With a target—the management plan document mentioned above—in clear view, the matter of developing student skills to hit it effectively meant examining precursor curricular courses and rhetorical challenges appropriate to each. From the beginning, the forestry faculty agreed with my assertion that writing effectiveness develops over time. Hence, we applied simple strategies in varied courses and focused our approach on four key questions that I suggested all forestry programs might ask of themselves (Blank, 1983):

1. Does the curriculum consistently demand that students communicate their knowledge?
2. Do we create realistic report situations?
3. Do we teach students to use data and the literature effectively?
4. Do we encourage students' verbal precision and stylistic flexibility?

Emphases differed from course to course, as material covered and assignments required suited pedagogical aims. In the dendrology (woody plant identification) course, for example, students did not write reports. However, the professor required attention to correct spelling of scientific names (binomial nomenclature) on tests along with acquisition and use of proper plant physiology terms during the field labs and quizzes. Here accuracy was the standard and a significant basis for evaluation. In silvics and physiology, short reports in response to assigned topics required text-based research and assimilation of source material with proper citation methods. The silviculture course involved a field lab when teams gathered data, analyzed the implications and generated brief reports in typical scientific report format. Each forestry faculty member

in most cases had already discovered which types of communication were most appropriate to the pedagogical aims in his or her course. Making connections between their individually determined aims and the broader structure of the embedded writing program became my job.

Together with forestry instructors, I developed a few innovations. In the forest management course (senior year, fall semester), a co-instructor and I discovered a way simultaneously to broaden students' exposure to relevant material and accomplish a missing piece in the span of communications situations students experienced. We created the *Forest Management Senior Symposium* in 1984 (the symposium in 2019 was the 35th annual event). The idea was to create an atmosphere resembling a professional meeting, to bring a level of formality to the talks, and to reinforce the idea that writing in the academy could be for real audiences. The current professor assigns a different topic to each student in the class, and topics cluster around a general theme such as harvesting technology, inventory and measurement strategies, and stand treatments. Students review pertinent literature and generate analyses to illustrate principles or demonstrate solutions to forest management issues. Then during the semester's last several lab periods, the students present their papers in moderated sessions attended by their classmates and as many faculty members as we can gather. We publish the schedule and use faculty evaluations of the performances as one of our measures for outcomes assessment.

In the capstone course, we transformed the experience based on preparation of the management plan and introduced an assignment requiring each student to develop a client profile. We also divided the planning process into two parts requiring students to conduct a feasibility study and to submit that document midway through the semester. This change allowed us to review students' writing and provide comments attentive to content, format, style and grammar. Much of the gathered background material in the feasibility study document reappeared in the management plan, but the midterm review suggested ways students could improve when preparing their final plan document.

We also formalized field tours at the end of the semester so students presented their management plans orally to a peer and faculty audience in the forest where the plan pertained. This two-hour excursion required each team to create a tour itinerary, review plan elements on which they wanted to focus, and consider the logistics of addressing a large group in a field setting. The experience was true to life, something many of these students would do as professionals. In fact, one graduate reported that at his first job, just a month or so after his team organized and conducted their senior field tour, his work colleagues heard they needed to prepare for a visit from company "top brass." His colleagues were frantic about how to plan such a visit and what to show their corporate bosses. Based

on his recent experience, this new hire volunteered to organize the field tour and manage the event, carried it off without a hitch, and guaranteed a future with the company for which he still works. Building such confidence became central to aims of the communication program developed in the forestry curriculum.

Integrating attention to writing and speaking in courses created interesting situations and a few unanticipated tensions. One confrontation seems comical in retrospect but was a serious matter at the time. A funded research project that aimed to teach forestry students word processing so they would pay more attention to revising their drafts alarmed some faculty. Professors were concerned about allocating perceived limited resources of computer lab time to student writing. Computers, after all, were for computational work, analyzing data and generating answers to technical questions, like the effects various treatments would have on forest stand growth and yield. For a while, policy dictated that students needing "quantitative" computing time could claim priority use over students "writing and revising" papers. As a practical matter, though, students soon recognized the value of word processing as a tool to facilitate better reports, from drafting through finished submissions, and the false dichotomy between work on numerical content and verbal expression of that content evaporated.

Another development that enhanced student performance was creation of a brief reference manual, first issued as a course pack and eventually posted online for easier student access. *Communicating Natural Resources Information* (1990) addressed formats and a variety of matters, using examples from students' work. The guide focused on formats from business cover letters to memoranda to scientific paper structures required in technical courses. Subsequently several other forestry schools requested permission to use the guide for their students.

Well before that, however, news about our effort in the forestry department at NC State had affected other forestry programs (Dohaney, 1984; Wellman & McMullen, 1984). Publications in the *Journal of Forestry* (Blank, 1983, 1988) and attendance at a variety of workshops and conferences (Blank, 1986) drew attention and queries. Several programs similar to ours employed part-time "writing consultants" to tutor students and help them address their writing weaknesses. In fact, the integrated approach we were taking at NC State influenced the accrediting committee of the Society of American Foresters to revise its criteria and review process concerning communication requirements. Rather than require specific composition, public speaking, and technical communication courses, the committee recognized that the integrated development of communication skills could be a more effective way to reach the desired goal: foresters who understood how to meet audience needs in a variety of media.

After eight years of program development, we had significant results to report about integrating teaching of writing skills in technical courses (Blank,

1988). Four hundred or so students had graduated and sample documents they produced in their senior capstone course testified to the improvement in the ability to communicate sophisticated technical information. That improvement evolved through continuing practice incrementally gained over four years, as shown in Table 5.1 (derived from data reported in Blank, 1988). We calculated that students produced over 200 pages of supervised writing in forestry courses during their collegiate careers (Blank, 1988).

Table 5.1. Amounts of writing by curriculum level in Forest Management WEC Program circa 1988

Curriculum Unit	Courses	Assignments	Number of Text Pages
First Year	1	7	15
Sophomore Year	2	6	15
Summer Practicum	2	4	12
Junior Year	3	20	76
Senior Year	3	9	88
Technical Electives	6	10	60

Responding to a university-administered survey in 1992, students in the College of Forest Resources (CFR) provided evidence that the emphasis on communication development was having an impact. To the statement "my courses have helped develop effective writing skills," 86.6 percent of CFR students agreed or strongly agreed. Only students in the College of Humanities and Social Sciences responded more positively (87.7%), and the next highest group was from the (then) College of Education and Psychology (81.3%). With the statement "my courses have helped develop effective speaking skills," 66.7 percent of CFR students agreed or strongly agreed, compared to College of Veterinary Medicine students (67.5%) and students from the College of Humanities and Social Sciences (66.2%). Our reading of these results was that efforts in the College of Forest resources had changed the culture and created expectations among both students and faculty.

Moreover, in response to our reporting results (Blank, 1988), peer institutions and others in natural resources reported positive effects from integrating attention to the rhetorical context and practical work of communicating in technical courses (Daniels & Reed, 1992; Wellman et al., 1990). This movement, of course, was part of broader recognition throughout academe that the point of contact for communication pedagogy mattered, and assumptions needed to be challenged (Jones & Comprone, 1993). Writing in discrete disciplines emerged as an area needing research.

While developing the program in the NC State Department of Forestry, I was taking courses preparing to qualify for and do research to earn a Ph.D. in forestry. The dissertation research examined differentiation of communications roles among professional foresters (Blank, 1992, 1994). Employed in four professional sectors outside academe, foresters encounter varied audiences. Communication internal to their organizations dominates the roles filled by industrial foresters and foresters employed by the USDA Forest Service. Most foresters in state agencies and nearly all foresters employed as private consultants far more frequently communicate with audiences outside their organizations than do their counterparts in industrial and U.S. Forest Service positions. The results of this research confirmed the correctness of educating our graduates to be versatile communicators, alerted to the variety of communication contexts where they would find themselves engaged as professionals. As their careers evolved and the technologies of communicating changed, we expected that the basic understanding we had shared would evolve as well (Blank, 1986, 1995).

The writing program created in the Department of Forestry at NC State University was unique at the time of its creation. It came about within the larger institution that eventually awoke to realize students all across its curricula and diverse programs were writing in specific disciplinary contexts. Discussions about how to accomplish the desired support for faculty progressed, and I was engaged in those discussions. Taking a leadership role on the Council on Undergraduate Education (1992–1994), I worked alongside a variety of faculty and administrators seeking to fashion the institutional framework for improved pedagogy. Communication was always an essential component of that improvement. Figure 5.1 illustrates the process through which the communication program in forestry developed. However, such a model understanding of that process perhaps exists nowhere outside my head as, in retrospect, I considered what my faculty colleagues and I accomplished in a process analogous to writing a prescription for a forest stand. From existing tree conditions, one gathers data and defines end goals, alert to the tools and techniques potentially implemented. A model prescription results, and work ensues. Multiple factors can derail the prescription, however, and change stand development.

Parts of the process were much easier to implement than others, and collegial buy-in fostered some advances better than others. For example, having a defined target that students were expected to produce in their senior spring semester capstone course could effectively structure contributing writing experiences in earlier courses. Assignment design, however, relied upon each faculty member's particular goals. Research scientists/teachers insisting on the arcane style of peer-reviewed journal articles found the gap between students' vernacular prose and publishable aspirations daunting. Thus, negotiating acceptable

reality became a collective process.

The overarching plan was to create a departmental culture engaging every student in the evolution from novice to professional and fostering appropriate communication to varied audiences and to address varied situations. Having colleagues committed to doing this I found was exceptional, and not every department is likely to have such a structured curriculum. In fact, two more recently created programs (environmental technology and environmental science) in our department impose much less structure and less clear endpoint expectations. Moreover, in those curricula, our faculty teach far fewer courses, thus have diminished effect concerning students' rhetorical development.

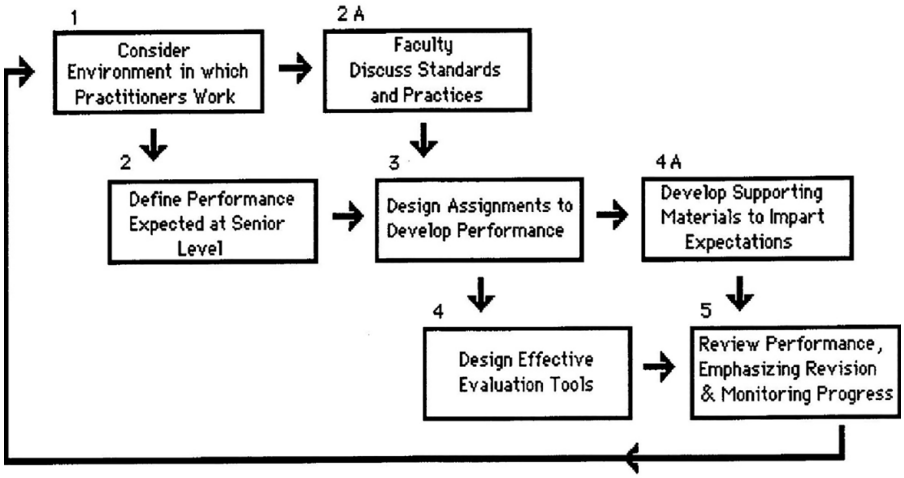


Figure 5.1. Conceptual model for developing WEC in a technical curriculum.

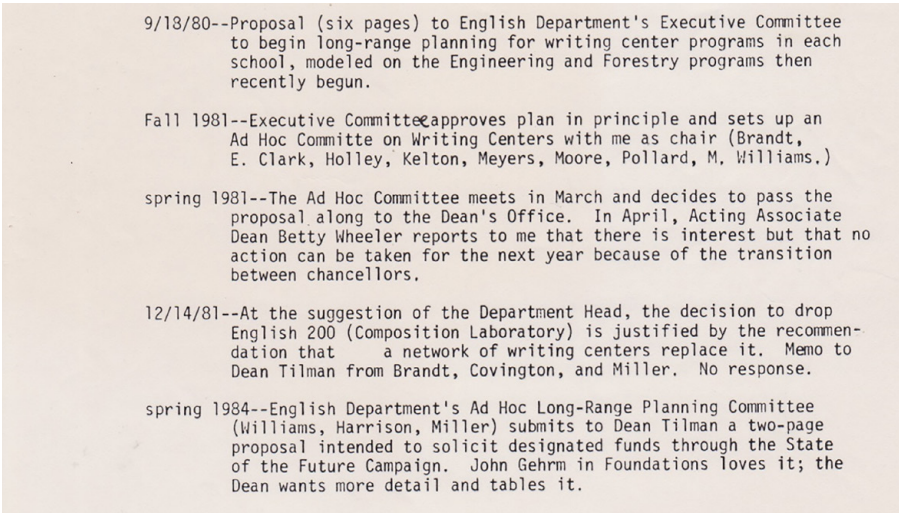
As a practitioner of environmental assessment and a veteran of educational problem solving, I believe this model still has validity for anyone seeking to create an embedded communication program.

THE FORESTRY MODEL AND NC STATE WEC HISTORY

Demonstrated success with the forestry faculty initiative and the School of Engineering Writing Assistance Program (WAP) (Covington et al., 1984, 1985) had prompted other advocates on campus to see prospects for writing programs in all colleges as a logical next step for NC State. However, traction outside the Department of Forestry and School of Engineering was difficult to find. Telling that story requires a bit of backtracking.

In November 1985, Dr. Carolyn Miller, recently retired SAS Distinguished Professor of Technical Communication, sent a memorandum to the Ad Hoc

Group on Writing Centers (a faculty member from English, from the College of Education, and me) about a meeting the following week. In her memorandum, she referenced a whitepaper I had prepared and circulated entitled "Writing Across the Curriculum." To her memo, she also attached Kinneavy's overview of the WAC movement published in *Profession 83* and a proposal she had created for university funding through the "State of the Future Campaign." In the memorandum, she listed a series of "attempts to raise the issue within the Department of English and SHASS" [the then School of Humanities and Social Sciences] starting in 1980 (Figure 5.2).



9/18/80--Proposal (six pages) to English Department's Executive Committee to begin long-range planning for writing center programs in each school, modeled on the Engineering and Forestry programs then recently begun.

Fall 1981--Executive Committee approves plan in principle and sets up an Ad Hoc Committe on Writing Centers with me as chair (Brandt, E. Clark, Holley, Kelton, Meyers, Moore, Pollard, M. Williams.)

spring 1981--The Ad Hoc Committee meets in March and decides to pass the proposal along to the Dean's Office. In April, Acting Associate Dean Betty Wheeler reports to me that there is interest but that no action can be taken for the next year because of the transition between chancellors.

12/14/81--At the suggestion of the Department Head, the decision to drop English 200 (Composition Laboratory) is justified by the recommendation that a network of writing centers replace it. Memo to Dean Tilman from Brandt, Covington, and Miller. No response.

spring 1984--English Department's Ad Hoc Long-Range Planning Committee (Williams, Harrison, Miller) submits to Dean Tilman a two-page proposal intended to solicit designated funds through the State of the Future Campaign. John Gehrm in Foundations loves it; the Dean wants more detail and tables it.

Figure 5.2. Schedule from C. R. Miller memorandum 11/8/1985 to AD Hoc Group on Writing Centers.

Frustration about lukewarm administrative support for the initiative is obvious. Apparently, resource questions (space and staffing issues) stymied administrators. The $155,000 budget proposed for start-up and annual expenditure of $130,000 (see appendix) proved daunting. In hindsight, finding and sending communication "missionaries" to the rest of the technical university was a dubious agenda item for folks primarily thinking about the status quo within the institutional culture of the time. SHASS seemed and often acted isolated from the rest of the university, its administration chafing under perceived "service" roles to the professional curricula and programs. The vision articulated in the proposal would thrust SHASS into a leadership role on campus, and this was uncharted territory.

While the WEC program in the forest management program established expectations in curricula subsequently developed in the Department of Forest-

ry, several factors prevented replication of the model in other departments or colleges at NC State. The WAP in the School of Engineering functioned in one dimension more like typical writing centers at other institutions—serving drop-in students with specific writing project questions or editorial needs. However, WAP outreach to faculty members interested in improving assignments and WAP consultations with engineering faculties about their students' overall rhetorical development moved the WAP beyond the typical writing center of the era. These latter WAP roles emulated the conceptual model the Department of Forestry was integrating. In effect, the WAP staff were missionaries, but a crucial point here is that they were missionaries the School of Engineering was paying. The problem SHASS administrators perceived but sidelined was how to pay for communication missionaries in the other schools at NC State University because the SHASS budget was not going to do it.

Out of the meetings convened in 1985–1986, a proposal developed directed to the provost. The proposal covered key elements in the initial proposal (see appendix) and identified the need for 8.5 positions to implement a Writing Assistance Program across the entire university. Positions included an overall director and secretary and coordinators in each of the schools (either full or halftime positions, depending on size of the school student population). It also called for an office in each school for these personnel, but the proposal did not include a budget or dollar amounts. In a closing section headed *Benefits*, the proposal said:

> The improvement of student writing is a widely perceived need, both on campus and in the industries that employ students after graduation. No single department can or should be made responsible for fulfilling that need; rather, university-wide cooperation and coordination are required. . . . This approach is effective because it treats writing not as a separate subject matter but as an integral part of all thinking and learning.

Nevertheless, nothing substantive came of the proposal at this point, lack of resources being the obvious impediment.

A subtler matter, never directly addressed, concerned who would champion the effort. Ad hoc committees and auxiliary initiatives by faculty members with other primary assigned duties were not getting the attention of administrative leadership. Chiefly, our institution needed a person primarily dedicated to the task defined by the proposal that had been developed. Administrators, understandably, remained reluctant to allocate resources for a nebulous idea, however ardently urged by a core of rhetoricians. Asked on several occasions if I wanted to be director of writing at North Carolina State University, I could not say. For

me, several reasons precluded advancing this programmatic change across the university structure. First, I did not have tenure, in fact, was still pursuing my Ph.D. as an instructor on an annual contract. I aspired to attain the requisite degree to continue a career in the academy and was doing so in forestry—not English composition or rhetoric. Thus, I was learning requisite technical aspects of a new discipline (actually many disciplines because the subject I was engaging—forestry—encompasses varied aspects of other disciplines). That learning was feeding interests in new fields, such as environmental impact assessment. Finally, my life outside the academy included environmental consulting, a spouse and children, and several extracurricular activities (i.e., Artspace, Inc., and Capital Area Soccer League). Suffice it to say, by the late 1980s I had decided not to be the champion for WEC at NC State; instead, I had chosen to sustain an academic career by teaching in the forestry department. This choice continued my leadership of the Writing Improvement Program in the College of Forestry but, in 1988, my employment with the College of Engineering WAP ended.

Broader educational questions eventually brought attention back to WEC at NC State. Early in the 1990s the Southern Association of Colleges and Schools (SACS) started pressing for institutions to develop outcome assessment plans. In 1992, the Department of Forestry volunteered as one of the pilot programs to create an assessment process, so faculty members delivering the undergraduate program considered how to gather information to document our outcomes. Having completed my Ph.D. in the spring of 1992, I was able to lead the assessment project in forestry and was also appointed to represent the College of Forestry on the Council on Undergraduate Education (CUE). The senior capstone course appeared to provide the best opportunity to measure what our students could do and by using that experience, we engaged alumni, professors, and students in monitoring progress. The management plans produced by the senior students provided clear evidence of their written communication ability. Field tours demonstrated oral communication ability, and the questioning during these tours provided insight to depth of knowledge about the range of topics incorporated in foresters' education. These tours have been the central component for assessing forest management program outcomes for 28 years. The point here is that the forestry faculty already had accepted the fact that evaluating outcomes of an applied practice (e.g., teaching) made sense.

Attention to outcome assessment became a major concern the CUE needed to address after developing General Education Requirements (GER), as described in Carter's Foreword (this volume). The requirements were due for implementation in the fall of 1994 and grew from an extensive university self-study that included many curricular facets. Meanwhile, in tandem with developing the GER, the place of writing and speaking in all curricula became a prominent

question so, once again, a new version of the Writing Center Proposal, which administrators had repeatedly kicked to the sidelines, reemerged in the context of how to implement the GER. A 22 March 1994 memorandum to the Provost from the task force chair, on behalf of the Dean for Academic and Student Affairs' *Task Force on Writing*, concerned the "Writing Center Project—Research Plan." In this memo, the chair (on behalf of task force members) challenged the need for further study and advocated moving ahead with development of college-based writing centers. The memo argued students at NC State needed writing assistance. It affirmed the efforts ongoing in the Department of Forestry and the School of Engineering but pointed out that these were efforts with limited effect because of the numbers of students reached within the total NC State population. It advocated for a writing center but acknowledged that since none existed at NC State, only results at other institutions could be used to validate the concept. The memo summary argued that further study would be complicated, that lack of writing centers on the campus would limit possibilities for research on the campus, and a study would only confirm what advocates of the writing center proposal already believed.

However, in a memorandum dated 25 August 1994, the dean charged subgroups of the Council on Undergraduate Education with several tasks. One of these tasks was to assess "impact of writing across four colleges (two with formal programs and two without) as per the provost's request." This repeated demand by the provost irked some writing-centric advocates, and his call for a study to demonstrate need for allocating resources befuddled some persons hoping to address already perceived needs. Ultimately, those of us who clearly understood the provost's desire for solid data upon which to base a commitment of considerable resources prevailed upon our colleagues. Thereafter, the Council on Undergraduate Education 1994–1995 Assessment Plan included a major emphasis on writing, with the initial focus on what was happening on campus "followed by efforts to determine what results are occurring." Efforts planned included compiling syllabi, examining results from the Riverside Base Test administered to incoming students, questioning faculty and program administrators about adherence to stated course requirements, and surveying teachers of junior-senior writing courses about incoming students' competencies. Still, the shape an institutional response should or could take remained unclear—a matter of resource allocation and an institutional culture of separate colleges each committed to its own programmatic priorities. A 23 January 1995 memo to the "Task Force on Writing" from the chair and the dean stated: "the original plan to compare writing performance across colleges was abandoned because appropriate comparison groups and conditions do not exist." Instead, the chair and dean said a reconstituted task force would "gather information from departments about current writing requirements, implementation plans

for the new GERs, and resource needs." The memo also asked prior Task Force members if they wanted to continue being involved in the effort, and nine people affirmed their commitment to continue.

The Writing Work Group spent considerable attention on the question of what constituted a "major paper," because the GER required that every curriculum include a course in which a major paper was required. As a memo dated 30 March 1995 indicates, this was not easily resolved: "there is so much diversity between the 145 programs, it is difficult to determine exactly what constitutes a major paper [e.g.,] a major paper in math is very different from a major paper in history." Guidelines for length, whether written in the discipline (major), and how much grading weight it should carry in a course were some of questions to be resolved. Spotty implementation by departments was problematic. Some folks asked if computer literacy or library research were part of the major paper requirement. Others wondered whether requiring an advanced humanities or social science course in a curriculum could serve to meet the major paper requirement. A variety of other questions surfaced but, as one task force member noted, not "knowing how" hampered the true spirit of the faculty members who wanted to do more regarding writing. To address this gap, the Writing Work Group invited a consultant to campus. Art Young, Coordinator for the Communication Across the Curriculum Program at Clemson University presented a seminar in April 1995 entitled "The Writing Learning Connection." Decently attended, but still mostly by WAC and writing center advocates, the seminar signaled a galvanizing core of interest beyond the small number of folks a decade earlier. Most important, university administrators noticed and participated.

By October 1995 the Writing Work Group had developed *Guidelines for implementing the "significant writing" requirement* (Appendix B). These guidelines essentially articulated the principles behind writing-enriched curricula. Questions immediately began to emerge. Ultimately, the CUE deliberated for a year about assessment methodologies and priorities, not finding consensus concerning baseline and standardized testing methods for the variety of outcomes in the range of curricula and core demands in curricula. Attempting to find a consensus about how to address writing assessment was only part of the bigger picture in the university's mosaic of priorities during 1995. Just getting departments to embrace any level of outcomes assessment was now a chore of significant magnitude.

The Council on Undergraduate Education agenda for 26 January 1996 announced its primary focus for the spring semester was "to hold planning meetings in each college to discuss how the proposed writing-intensive course requirement can be interpreted and implemented." I do not recall attending such a meeting in the College of Forestry, though the topics of writing and the general

education requirements arose frequently. Probably, the three departments in the college had already more than met expectations of the GER. We certainly had in forestry so did not see a need to participate in another round of discussions.

Nevertheless, the institutional response represented in 1996 by this expectation that every college would discuss implementation of a discipline-based communication requirement validated arduous work that had gone before. It elevated attention to writing and speaking among the priorities teaching faculties should address and formalized review of curricular outcomes in many cases. Indeed, when curricular outcome assessments were fashioned, more often than not one of the four or five stated outcomes involved the ability to communicate material obtained in pursuing the academic degree. As assessment plans evolved across the campus, the increased weight of communication's importance to the entire educational enterprise underscored the need for a central vision and leadership.

The commitment to the enhancement of communication across the NC State curriculum culminated in a proposal to establish a centralized program to coordinate the effort, headed by a recognized WAC expert and amply funded. Thus was born the first institution-wide WEC program in the US, NC State's Campus Writing and Speaking Program, designed both to provide broad, university-wide programming and to assist departments as they created writing-enriched curricula. As a national search was mounted in the fall of 1997, composition and WAC expert Michael Carter served as Interim Director and began meeting with individual departments, using the methods described in his Foreword and by other contributors to this collection to help them articulate their expectations for students' writing and oral communication and inscribing these in working documents. The national search yielded an offer in the spring of 1998 to hire Chris Anson, then at the University of Minnesota, as the new director. Unable to uproot his family in a matter of two months, he delayed his arrival until the summer of 1999 while Carter continued as interim director. The delay, however, allowed Anson to travel frequently to NC State during the 1998–1999 academic year to work with Carter, meet with faculty WEC groups, and participate as an ex officio member of the search committee for an assistant director. The person who accepted that position was Dr. Deanna Dannels, who was finishing her Ph.D. in oral communication across the curriculum at the University of Utah. Both Anson and Dannels arrived within a few weeks of each other in the summer of 1999. The CWSP has now been operating for 23 years.

UNDERSTANDINGS (NOT CONCLUSIONS)

Looking back at this history makes apparent that the idea of integrating communication throughout the curriculum could not easily translate into universal

practice. The scale-up issue that often affects technological systems comes into play: what works in small and closed systems may not perform well in larger and more open systems without a full-fledged, supported program. In this case, we in forestry had an educational approach that worked on its relatively small scale. Forestry students have never constituted more than a tiny fraction of the students at NC State. The forest management curriculum has always been highly structured, and students move through their required classes together. Very few of forestry students' core curricular courses occur in multiple sections, so every student shares the experience of these courses. Students funnel through a summer practicum between their second and third years or transfer into the program with equivalent skills and then progress with the post-practicum cohort through third- and fourth-year courses, again altogether. Such features do not describe many curricula at NC State University. The cohesiveness of the curriculum and the size of the student cohorts and the cooperative commitment of the faculty involved were all exceptional. Larger and much more diverse curricula and programs did not readily embrace the model offered by the Department of Forestry until WEC became established and the university made a commitment to enhance students' communication abilities across the entire institution.

By the early 1990s, with more than a decade of experience, in forestry we expected whatever requirements the university applied regarding communication were likely to be less demanding than those self-imposed expectations the forestry faculty had applied. Thus, aspects of the CUE and broader university discussion seemed inconsequential to what the forestry faculty had already implemented. For instance, CUE discussion about a "major paper requirement" seemed irrelevant to my forestry colleagues and me. The entire debate about how much writing constituted significant writing also seemed trivial in light of 200+pages we had documented the forestry curriculum requiring (Blank, 1988). My colleagues had already, and long ago, stated their intention to integrate writing development in technical curricula. However, though a member of the Writing Work Group and of CUE, I was not inclined to push very hard for such commitment from other department faculties, having worked in three colleges with faculty across a range of academic cultures and constraints, therefore understanding the unique culture in the forestry department that had embraced me and not seeing it elsewhere.

Moreover, having piloted outcomes assessment and found it potentially helpful, we were willing to proceed. The new General Education Requirements (GER) could be accommodated reasonably easily with few alterations in the—already interdisciplinary—forestry curriculum. Within the changing culture of the university, we were no longer outliers so much as veteran pioneers in these two now-linked efforts of teaching professionals who would need to be able

to communicate their acquired knowledge. The challenges that would come in the decades that followed emerged from faculty turnover, curricular evolution, various distractions that reduced vigilance concerning students' rhetorical development, and the establishment of a writing and speaking program. As curricula in the department developed and the faculty grew more discipline-diverse and younger, therefore more focused on research productivity and tenure pressures, maintaining consistent focus on teaching communication within technical contexts became harder. This challenge will forever face those advocating WEC in a research I university. Thus, having strong institutional leadership along with adequate resources and incentives to advance the ability of faculty to make the dual challenge work remains paramount, and suggests the importance of establishing and supporting centralized WEC programs such as the Campus Writing and Speaking Program and the other programs represented in this collection.

REFERENCES

Blank, G. B. (1983). Writing and the forestry curriculum. *Journal of Forestry*, *81*(8), 537-538.

Blank, G. B. (1986). Forest resources students and word processing. In H. V. Wiant, D. O. Yandle, & W. E. Kidd (Eds.), *Proceedings of the Forestry Microcomputer Software Symposium* (pp. 516-526). West Virginia University.

Blank, G. B. (1988). Writing in forestry: An eighth-year report. *Journal of Forestry*, *86*(9), 31-35.

Blank, G. B. (1990). *Communicating natural resources information: A guide for students*. Department of Forestry, North Carolina State University.

Blank, G. B. (1992). How forestry consultants communicate. *The Consultant*, *37*(4), 26-28.

Blank, G. B. (1994). Communication in the forester's workplace. *Journal of Forestry*, *92*(3), 35-40.

Blank, G. B. (1995). Communications technology and foresters. *Journal of Forestry*, *93*(5), 50-51.

Carter, M. (2021). Foreword. In C. M. Anson & P. Flash (Eds.), *Writing-enriched curricula: Models of faculty-driven and departmental transformation.* The WAC Clearinghouse; University Press of Colorado. https://doi.org/10.27514/PER-B.2021.1299.1.2

Covington, D. H., Brown, A. E., & Blank, G. B. (1984). A writing assistance program for engineering students. *Engineering Education, 74*(2), 91-94.

Covington, D. H., Brown, A. E., & Blank, G. B. (1985). An alternative approach to writing across the curriculum: The Writing Assistance Program at North Carolina State University's School of Engineering. *WPA: Writing Program Administration, 8*(3), 15-23.

Daniels, S., & Reed, M. (1992). Enhancing forestry education through writing. *Journal of Forestry*, *90*(3), 221-226.

Emig, J. (1977). Writing as a mode of learning. *College Composition and Communication, 28*(2), 122-128.

Flash, P. (2021). Writing-enriched curriculum: A model for making and sustaining change. In C. M. Anson & P. Flash (Eds.), *Writing-enriched curricula: Models of faculty-driven and departmental transformation.* The WAC Clearinghouse; University Press of Colorado. https://doi.org/10.27514/PER-B.2021.1299.2.01

Halloran, S. M. (1978). Eloquence in a technological society. *Central States Speech Journal*, *29,* 221-227.

Jones, R., & Comprone, J. J. (1993). Where do we go in writing across the curriculum? *College Composition and Communication 44*(1), 59-68.

Luskey, M., & Emery, D. L. (2021). Beyond conventions: Liminality as a feature of the WEC faculty development. In C. M. Anson & P. Flash (Eds.), *Writing-enriched curricula: Models of faculty-driven and departmental transformation.* The WAC Clearinghouse; University Press of Colorado. https://doi.org/10.27514/PER-B.2021.1299.2.04

Scafe, R., & Eodice, M. (2021). Finding writing where it lives: Departmental relationships and relationships with departments. In C. M. Anson & P. Flash (Eds.), *Writing-enriched curricula: Models of faculty-driven and departmental transformation.* The WAC Clearinghouse; University Press of Colorado. https://doi.org/10.27514/PER-B.2021.1299.2.11

Wellman, J. D., & McMullen, J. Q. (1984). Teaching forestry students how to write. *Journal of Forestry, 82*(7), 413-416.

Wellman, J. D., McMullen, J. Q., & Hirsch, G. N. (1990). Evaluation of a writing improvement program. *Journal of Forestry*, *88*(11), 24-27.

APPENDIX A. PROGRAM PROPOSAL

NCSU STATE OF THE FUTURE CAMPAIGN

PROPOSAL FOR A WRITING CENTERS PROGRAM AT NCSU

The Department of English proposes a campus-wide Writing Centers Program at North Carolina State University. Such a program would provide a mechanism for coordinating and enhancing instruction in writing at all levels and in all schools; it would also help integrate writing into student efforts in all courses. Such a program would be a major commitment to the improvement of writing throughout the university and would rely on the function of writing as a method of learning as well as a means of communicating what has been learned.

Because no such mechanism currently exists, the various writing programs on campus operate separately, without consistency in their goals and techniques. In addition, they can provide only partial and intermittent opportunities for students to progress, with the result that many students do not take writing seriously and few achieve their potential to become articulate professionals.

Program Description

AS a centralized resource of planning and expertise, a Writing Centers

Program would provide services and activities to the faculties and students within each School, according to a school-by-school assessment of needs. Such services and activities could include the following:

Writing laboratories Tutorials

Course lectures on writing assignments and problems
Training for graduate assistants who serve as graders on labs and exams Advice and assistance for faculty in designing and evaluating writing assignments

Workshops for foreign students and others with special problems
Workshops for thesis and dissertation writers

Advice on curriculum, course design, and standards to enhance student writing

This program would be based not on a principle of remediation but on integrated instruction and continual opportunity and practice; continuity is essential for the development and improvement of the complex skills required for effective written communication. On our campus, the program would need to be flexible, allowing for adaptation to the needs of each School. It should build on the well established tradition of effective programs at other institutions, such as VP!, Western Carolina, UCLA, University of Maryland, University of Michigan, Michigan Tech, Smith, George Mason, Carnegie Mellon, University of Vermont; many of these programs have been supported by major grants from the federal government as well as private corporations (for example, Buhl, Exxon, General Motors). The program should also build on the existing expertise and resources at NCSU:

The courses and programs in the Department of English
The Writing Assistance Program, School of Engineering
The Writing Improvement Program, Department of Forestry
The Academic Skills Program
The National Writing Project, School of Education
The English program for foreign students, Department of Foreign Languages

Careful planning and wide consultation would be necessary to determine the best features and design for a campus-wide program at NCSU. Such planning should include study of the occasions and purposes for writing throughout the university curriculum, the methods and resources available on campus, and evaluation of existing programs.

Benefits

The improvement of student writing is a widely perceived need, both on campus and in the industries that employ students after graduation. No single department can or should be made responsible for fulfilling that need; rather, university-wide cooperation and coordination are required. By involving faculty and students across the campus and at all levels, the Writing Centers approach would reinforce the contention that good writing is important in all classes of the University and in all aspects of professional life. This approach is effective because it treats writing not as a separate subject matter but as an integral part of all thinking and learning.

Budget

Start-up funds for a Writing Centers Program would be required to plan the program, adapt proven techniques to the NCSU environment, train faculty and

staff, and purchase equipment. Beyond the planning phase, continuing funds would be necessary for a director and several staff assistants, tutors, and graduate assistants, as well as operating supplies.

Start Up	Planning (one year)	$25,000
	Visiting consultants	$10,000
	Computer laboratory	$100,000
	Training workshops	$20,000
		$155,000
Annual	Director	$30,000
	Staff for 10 Schools	$100,000
		$130,000

APPENDIX B. WRITING REQUIREMENT GUIDELINES

NCSU Writing Work Group — October 1995
Council on Undergraduate Education

Guidelines for implementing the "significant writing" requirement

A course with a "significant writing component" includes **both practice and instruction** in types of writing characteristic of a particular field or professional domain. This component of the GERs is intended to ensure that students will be introduced to the types of writing that professionals in their respective disciplines engage in, that they will receive instruction in and feedback on this writing from professionals in their major fields, and that they will thus recognize writing as integral to learning and essential for communication in all fields. Courses used to satisfy requirement (3) should provide guided **practice** in discipline-specific genres and opportunities to write for a variety of discipline-specific audiences, e.g., lab reports and research proposals in the sciences; unit plans in education; reviews and position papers in philosophy, literature, and political science; library research papers or literature reviews in anthropology, psychology, and history. Informal writing-to-learn activities would also be appropriate in these courses.

A key assumption behind this requirement is that students do not learn to write better simply by writing more. Therefore, a term paper which students work on outside of class and tum in at the end of the semester will not fulfill the goals of this requirement. Similarly, essay exams or fill-in-the-blank lab reports, while they may serve other instructional goals, do not provide opportunities for guided practice in writing. In order for students to learn how to communicate effectively in their chosen fields, instructors must introduce them to the types of writing done in those fields and must provide guidance and support for the communication tasks they assign. Such **instruction** might include discussing in class the critical features of sample proposals or position papers, analyzing audience and purpose, providing feedback on early drafts, discussing grading criteria in class, holding individual conferences with students to discuss their work in progress, and so forth.

For example, a course in which students are asked to write lab reports could be considered to have a "significant writing component" if the lab report is treated as a standalone professional document for which the instructor offers models, formative feedback, and opportunities for revision, and which is evaluated using the highest standards of professional

or academic writing. Writing assignments and instructional supports should be specified in syllabi and course action forms in order to facilitate UCCC review.

APPENDIX C. WRITING AND SPEAKING REQUIREMENT REVISED RECOMMENDATIONS

NCSU Writing Work Group October 1995
Council on Undergraduate Education

WRITING A~I> SPEAKING
Revised Recommendation

(1) Two semesters of freshman composition and rhetoric.

(2) One advanced communications course in (a) writing, (b) speech, or (c) foreign language.

(3) Two courses with significant writing components in the student's major, ideally one each in the junior and senior year. A student's major is understood to include those courses designated as major requirements (as opposed to degree requirements) on the Automated Degree Audit. Guidelines for implementing this requirement are attached.

The foregoing recommendation was developed on the assumption that the faculty and administration recognize that meeting these goals requires students to engage in writing and speaking across the curriculum and throughout their undergraduate years. In order that skills develop broadly and consistently along with the individual's increasing knowledge of subject matter, all upper-division courses offered in the university should incorporate significant communications experiences.