New Curriculum Review Committee Report
April 21, 2009

I. Introduction

In the Fall of 2008, a committee of faculty, students, and administrators was appointed and charged with the task of reviewing the undergraduate curriculum in Arts and Sciences. Since then, the Committee has met a number of times, assessing focus studies and surveys and soliciting input through town hall meetings and discussions with various groups. The Committee's review has concentrated on three major components of the curriculum: the cluster system, core skill and area requirements, and small group experiences of several kinds. In making the recommendations that follow, we have been guided by the goal of developing a curriculum that engages the natural curiosity and drive of our students, that reflects the growth of knowledge and important changes in the nature of faculty research in the past ten years, and that includes requirements that are well-coordinated and work together interactively. Our aim is to provide students with a solid liberal arts education in the context of a research-oriented university, characterized by depth of knowledge in a major; breadth of understanding of modes of inquiry and the forms of knowledge in several core areas; and a sense of perspective and integration which comes from seeing connections across courses, disciplines, and schools.

II. Clusters

1. The Committee strongly supports the goals of integrated learning and coordination of coursework which the cluster system was designed to achieve. However, the present system has significant problems:

   (a) The system is **inadequate**. There is little collaboration between instructors in clustered courses that might help further the ends of coordination and integration. In general, clusters do not provide the *added value* that the Bowen Commission said was a necessary condition for having them.

   (b) The system is **unwieldy,** with upwards of 300 clusters and new ones submitted for approval every semester. This should make it easy for students, but it makes monitoring clusters hard. Moreover, courses are not offered with sufficient regularity to allow students to make reliable plans.

   (c) To some extent, a separate cluster requirement is **unnecessary**. Clusters often ride on the coattails of other facets of the curriculum; viz. 1st and 2nd majors, minors, and freshman programs. In fact, 45-50% of our students already choose majors and minors in ways that would satisfy two area cluster requirements. This

suggests a pattern of student behavior on which a revised system might further capitalize.

(d) The cluster system is **too demanding**. We require clusters in four areas; other universities require only three. Our requirement is an artifact of the bifurcation of the more traditional Humanities division into LA and TH. However, the extent of coherence need not be determined by the number of areas identified. In principle, the number of distribution areas and cluster requirements need not go hand-in-hand.[i]

2. As an alternative, we make the following proposal:

Replace the cluster system with an *Integrated Learning Model* (ILM)

- Treat primary majors, secondary majors, minors, and multi-course freshman programs (e.g. Focus) as one category of ways to achieve coherence and integration; viz. those with departmental or College office monitoring. Distinguish those from courses linked in other ways, which require special oversight (by the Curriculum Committee); viz. clusters per se. Those should now become only one of several options for integrated learning.
- Limit the number of linked courses that constitute the cluster option. For instance, allow only 'horizontally' linked courses that are either cross-disciplinary or cross-track (within multi-dimensional disciplines or those with an interdisciplinary character).[ii] Revise the set only once a year.
- Reduce the number of distribution areas in which a form of integrated learning is required from 4 to 3 (i.e. 2 in addition to the primary major).
- Allow two forms of integrated learning to be taken in the same division, although not in the same department.[iii]
- Change the requirement to read: *Two forms of integrated learning in addition to the major (at least one in an area outside that of the major)*.
- Expand existing options (e.g. Focus programs) and add new ones. (See the proposal under Small Group Experiences)

3. Rationale and Impact:

Identifying majors, minors etc. as forms of integrated learning distinct from clusters per se highlights the fact that integration is a goal obtainable in various ways, shifting the focus from a nominally single mechanism as the means by which that end must be reached. The result is clarification that opens the door to other effects. Thus ILM is different from the cluster system in several ways:

- One difference is fundamental: Rehabilitating the present cluster system will have the effect of entrenching clusters for the future, whereas ILM

- will have the effect of relaxing their grip on the curriculum and diminishing the importance of clusters per se. In addition, by shifting the emphasis onto majors, programs, etc., ILM creates a curriculum that can evolve as the world and students change, possibly in the direction of further reductions in the coherence requirement and corollary improvements in majors and programs.

  ILM rests on 3 premises, a rejection of which would be implied by an attempt to rehabilitate the cluster system: (i) Students now need somewhat fewer restrictions on coherence rather than more (although they still need some). (ii) The increasing interdisciplinarity and complexity of fields represented in majors and programs has made it less necessary to enforce coherence and integration. (iii) These trends are likely to continue.

- A second important difference is a one of principle: ILM assumes that we are not wedded to requiring coherence in every area. This is an assumption that the cluster system could adopt. However, the further premise in ILM is that the bar has been set too high in this regard. That premise does not fit well with the general thrust of an attempt to improve the cluster system as it stands.

- The third difference is practical and has important consequences:

  (i) ILM pares down the cluster system and makes it more flexible. As a result, it has substantial strategic effects. Students can use various options more easily to achieve the goals of integration and coherence. To maximize use of a 1st and 2nd major, a minor, and a multi-course freshman program, a student would presently have to sign up for each of them in a different distribution area. Under ILM, students would only need to sign up for two (out of three) in different areas (one in an area other than that of the primary major). Given the facts cited above, this means that about half of our students could satisfy the less-demanding and more flexible ILM requirements automatically.

  (ii) The planning and oversight load for students and faculty will be significantly less. Students will not need to map out a detailed four year plan encompassing 4 clusters across 4 areas, but only choose freshman programs and first and second year classes with an eye on possible majors and minors and the distribution areas into which they might fall. Careful attention to specific courses or concern with how frequently they are offered will not be required. ILM also encourages exploration: Any course taken in the freshman/sophomore years could be the start of a major or minor interest; those that are not may satisfy a distribution area requirement nonetheless.

(iii) ILM encourages the use of majors, minors, and freshman programs, which in many ways, serve the ends of course integration and coherence better than clusters per se. The connections across courses are stronger and less ad hoc than with clusters, being more naturally grounded in faculty research interests; and departments or program faculty are motivated to provide oversight and offer the necessary courses regularly.

II. Core Requirements

1. The Committee believes that having core requirements is important to insure that students acquire certain basic skills, as well as a broad knowledge base and familiarity with various methods of inquiry. While the present system works well in some respects, in others it does not. Three observations motivate the review of core requirements:

    a. Not all of the distribution areas are well-defined. In particular, the present construal of Language and the Arts (LA) as *forms of expression* does not capture well all of the courses included under that heading. The category includes topics courses that more properly belong under the heading of TH (the history and theory of the arts) or elsewhere (logic). Further, it is not clear that 'forms of expression' best describes what we want students to understand in a core area of this type.

    b. Present core requirements do not provide well for academic challenges and goals that have emerged in the past decade. Important changes have occurred since the inception of the present curriculum ten years ago: in world politics and international economic behavior, in the nature and communication of knowledge and research, in the intellectual abilities, backgrounds, and interests of our students. As one important consequence, a greater depth of cross-cultural understanding is now required. Such understanding can be produced in several ways; notably through the social sciences, area studies, and the study of foreign languages. A case can be made that proficiency in a foreign language makes a special contribution to this end, both because it opens a critical door on culture that enhances other methods and because language instruction now incorporates cultural components from the start. However, by including languages along with the performance arts and logic, LA does not acknowledge that contribution. Having LA as a distribution requirement has not served to encourage the study of foreign languages and cultures, as the following facts indicate:

- Only 20% of Arts and Sciences students take even two-course clusters in a foreign language. Moreover, *relative enrollments in language classes have not increased at all as a result of the present curriculum*: They were 11% of total enrollments in 1997/98 and 11% in 2007/08. By contrast, a 2006 MLA study shows, after adjusting for the increase in number of college students (thus an increase in total enrollments) that language enrollments across colleges and universities rose by 6.8% since 2002.

- In a 2006 COFHE survey of seniors here and at our peer institutions, WU ranked 15th out of 18 in the extent to which students felt their understanding of a foreign language had improved. In 2008, WU ranked 13th out of 15.[iv]

c. Skills taught in conjunction with QA courses and Writing 1 are not being developed as appropriately or effectively as they might be. First, recent events suggest that, beyond pure mathematics, a grasp of probability theory, statistics, the notion of confirmation by evidence, and the reliability of trend projections are critical life skills, necessary for informed and responsible citizenship and individual choice. This is so in light of the increasing need to evaluate claims made about what is known on the basis of empirical research, the complexities of investment strategies, and the need to make rational choices generally based on expected utility. However, the QA requirement does not particularly emphasize *applied numeracy*, as it might be called. In addition, it includes logic, which treats quantities in verbal terms ('all,' 'some,' 'none') rather than numerically.

   Second, in its present form, the goals of Writing 1 are not clear. As a result, there are a number of issues that need to be resolved about the common format, content, and administrative structure for the course. In addition, the potential for linking the course to other aspects of the curriculum remains underdeveloped. Realizing this potential could enhance the contribution of the course to the first year experience and to the students' understanding of the significance of writing in society and in their own lives.

2. The Committee thus makes the following proposals:

(a) Skills requirements:

(i) **QA:** The requirement should be defined in terms of an ability to use numbers and numerical analyses in connection with problems involving statistical analyses, judgments of probability, and evaluation of quantified evidential support. The new category will be *Numerical Applications* (NA).

- While courses such as Math 1011 will count as NA, not all basic courses in mathematics (in particular calculus) should be used in the fulfillment of this requirement.
- More courses in applied mathematics should be developed and allowed to count, upon approval by the Curriculum Committee.
- More courses should be developed to give non-science/math students more options.
- Students must satisfy the NA requirement within their first three years and should be encouraged to complete it within the first two years. They cannot place out of the requirement.

(ii) **Writing 1**: The Dean of the Faculty of Arts and Sciences should schedule a review of the program as soon as is feasible by a faculty committee including members from departments across Arts and Sciences. The committee should define the larger goals of Writing 1 and address, in relation to them, issues of format, content, placement, and administrative structure. The possibility of coordinating Writing 1 with the freshman book program and other aspects of the curriculum should also be considered. Recommendations should be made to the Faculty Council by the end of the next academic year.

(b) Core area requirements:[v]

(i) **LA & CD**: LA should be reconfigured in a way that fosters an understanding of diverse values, beliefs, traditions, and practices. The new category will be *Language and Culture* (LC):

- Include all language courses and all courses presently designated as CD in LC.
- Categorize courses in music, film, and dance that carry the present CD designation as LC.[vi] Count courses in those disciplines that deal with history and theory in the Anglo-North American tradition that are not designated CD for a different distribution requirement, viz. TH.
- Remove logic courses from LC.

- Include some linguistics courses.
- Eliminate the 3 unit CD requirement, which would be satisfied coincidentally with any course of 3 units or more used for the LC requirement.
- Retain the 3 unit SD requirement as it is: one 3 unit course in any area must carry the SD designation.

(ii) Unit requirements should be revised as follows:

- TH, NS, & SS: 9 units each.
- LC: 3 courses (of at least 3 units each) in the same foreign language;. 12 units otherwise.[vii]

3. Rationale and Impact:

- Appreciation for the Arts:
    - Courses in the history and theory of the arts in the Anglo-North American tradition that are not now designated as CD can be used to satisfy the TH requirement and will attract students accordingly.
    - All performance classes that would qualify for the present CD designation will remain in LC
    - As an encouragement to students to take them, performance classes can also be used to satisfy an integrated learning requirement, when they are linked to a TH or LC class.

- Understanding of diverse cultures:
    - The shift to LC will enhance rather than detract from the level of emphasis on cultural understanding presently provided by LA/CD. It is already possible to satisfy CD by taking certain LA courses offered by departments in which western European languages are taught. In allowing language courses generally to satisfy LC, we acknowledge the increased role that cultural components have come to play in all levels of language instruction. At the same time, allowing the several hundred courses presently designated as CD to satisfy the core LC requirement gives students great flexibility and signals the importance of cultural understanding as an educational goal.
    - While many students will opt to study European languages, several of those are spoken in many countries outside of Europe. Understanding these languages opens to door to understanding non-European cultures to that extent. In any case, the dominance of European languages is decreasing: Enrollments in Arabic at 4

- year colleges are up by more than 120%, Chinese by more than 50%, Korean by more than 30% (MLA 2008).
- It will be proposed that the College provide more support for Focus-type programs. This opens the door to the development of new programs that have a language component and concern the cultures of Asia, India and elsewhere to which students may be drawn. (See Small Group Experiences.)

- Apparent asymmetry between the unit requirements for LC and other areas:

  - This is consistent with current practices. There is already an asymmetry built into the present system. It is masked by the disjunctive requirement that is nominally the same for all areas: '8 or 9 units' in each. That translates into disparities both across and within categories: fewer units in NS than in TH and SS (e.g. two 4-unit classes in biology or physics vs. three 3-unit classes in TH or SS); within NS, 8 units as noted or 10 units (e.g. in introductory chemistry); within LA, 10 units for introductory language classes, 9 units for advanced language or for non-language classes. Thus the appearance of symmetry in the present system is artificial.
  - The proposal tolerates differences across categories in order to minimize disparities within the category LC. The majority of students who take the path that includes a 3rd language class will take 13-15 units (two 5-unit introductory classes, plus one 3 or 5 unit class) i.e. more than the 12 required without a 3rd language class. To that extent, there is no penalty for using non-language courses to satisfy LC (of which there are nearly 300 presently classified as CD).

III. Small Group Experiences

1. The Committee believes that the various forms of small group experience – Freshman programs, writing intensive classes, and undergraduate research – have been very successful and are now even more important than when the Bowen Commission recommended that all students have the opportunity to participate in them. The Committee thus makes the following recommendations:

a. Focus-type programs

- Engaging students in a small group experience:
    - Every student should have an enriched first and second year small group experience which also can be used toward a distribution area requirement
    - Small group course offerings should be significantly expanded in a phased development (i.e. over several years) with the goal of doubling our current offerings. Such courses should be reviewed for their effectiveness (i.e. sustained enrollment) and discontinued if proving unsuccessful (declining enrollment, lack of departmental interest in teaching said courses etc.)
    - Extend such programs to include the sophomore year

- Attracting the best faculty to lead these courses:
    - Provide faculty incentive grants similar to the current Kemper teaching grants
    - Reward departments that encourage the development and sustaining of such courses
    - Departments should award teaching credit for participation in these programs, and participation should be positively considered in tenure and promotion cases
    - Develop evaluative criteria for compensating departments with funds for replacement teaching and for weighing such participation in a department's favor when faculty requests are made (e.g. two or more well-subscribed courses sustained over three or more years would be strong grounds for hiring additional faculty).

- Encouraging Small Group Components for Large Courses
    - Generate a menu of highly successful large courses that would have a small group component attached, such as a discussion section taught by carefully mentored "master TAs." Provide resources to encourage departments to develop and sustain such small-group components (e.g. a slightly larger TA stipend, or attaching a designated TA Fellowship to a course).
    - Combine a "research" component to certain courses, in the form of follow-up independent studies with professors and/or graduate students. With the possibility of pursuing a related course or research component, Freshman seminars could expand into the second year and become a significant component in satisfying an area and/or integrated learning requirement.

- Opening Portals to Small Group Experience:

- Integrate the summer reading book program into freshman writing and topic based freshman seminars or Focus programs. Select the book/s accordingly, perhaps one with a literary/humanist emphasis and one with a science (or Pre-med) emphasis. These connections would create natural "portals" to integrated learning, especially if this proposal were better coordinated with Writing 1.
- The College of Arts and Sciences and the Office of the First Year Experience should actively advertise and promote small group experiences as *Portals to Washington University* and as natural *Pathways to Integrated Learning*. The administration will provide financial resources, as well as the advertising and advising infrastructure which will help direct students to these opportunities.

b. Undergraduate Research:

- The College should continue to coordinate research opportunities for undergraduates through the office of undergraduate research.
- Special efforts should be made to define and make available research with faculty in the social sciences and humanities.

c. Writing Intensive: More courses should be offered and not be limited to the junior and senior years.

d. Study Abroad: Courses taken abroad in one of a select list of programs should be allowed, with approval, to satisfy IL and LC requirements. These will include courses in foreign language locations, especially those with Washington University faculty in which grades are assigned, as well as courses/programs organized around a well-defined, coherent theme.

IV. Comparison of Models: Conception, Ease of Understanding and Use

A. Conception:

Discovery Curriculum	***Integrated Learning***
While coherence and integration can be achieved to some extent through majors and programs, course coordination is treated as a transcendent, autonomous, and pervasive goal, for which a substantial, special structure is required.	Coherence and integration have increasingly come to be characteristic of majors and programs, making a substantial, special structure unnecessary. Structural simplification corresponds to major/program improvements. Thus there is a dovetailing of goals.
Forms of expression constitute a core knowledge area.	Cross-cultural understanding constitutes a core knowledge area.
Quantitative analysis is defined primarily as an ability to work with numbers and make sense of complex arrays of quantitative data (with some emphasis on statistics).	Quantitative analysis is defined primarily as an ability to apply a facility with numbers to problems involving statistical analyses, judgments of probability, and evaluation of evidential support.

B. Structure:

Discovery Curriculum	***Integrated Learning***
-- 8 or 9 units each NS, SS, TH, LA (two 4-unit or three 3-unit classes, depending on department)	-- **9 units** each NS, SS, TH, LC (**12 units** LC without the 3rd language course)
-- 6 units **clustered** in each of **4 areas** (**3 in non-major** areas**)**	-- 6 units **integrated** in each of **3 areas** (**1** as **non-major** areas)
-- 6 units as **diversity** courses (CD & SD)	-- **3 units** as diversity (SD)
-- 9 units of skills courses (QA, Writing 1, WI)	-- 9 units of skills courses (NA, etc.)

C. Description:

Discovery Curriculum: 'You will take at least 8 or 9 units in each of 4 distribution areas: NS, SS, TH, LA (2 four-unit classes or 3 three-unit classes, depending on department). At least 6 units must be from clustered courses in each of the 4 areas. The cluster requirement can be satisfied in several ways: first and second majors, minors, and multi-course programs, as well as through designated clusters. Each option used must be based in a different area.'

Integrated Learning: 'You will take at least 9 units in each of 4 distribution areas: NS, SS, TH, LC (12 units in LC without 3rd language course). At least 6 units must be from integrated courses in each of 3 forms. The integration requirement can be satisfied in several ways: first and second majors, minors, and multi-course programs, as well as through sets of courses designated as 'clusters'. One of the options used must be based in a different area than that of the primary major.'

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[i] This would become evident if areas were to proliferate. If NS and SS were subdivided into life sciences vs. material sciences and individual vs. group behavioral sciences, respectively, it seems unlikely that we would ask students to sign up for six clusters.

2 In any case, impose the following constraints on linked courses included on the cluster list: (a) only 2 courses constitute a cluster, but at least 4 courses in each from which to choose; (b) introductory courses in every cluster; (c) every course *required* to complete a cluster offered every year (students can petition for study abroad exemption from courses required for a cluster, but still have to complete two courses for the cluster at WU); (d) narrowly defined clusters recast in more general terms; (e) clusters discontinued if not selected by a student in 3 years; (g) students notified every semester by email about the availability of courses in their clusters; (h) a cluster administrator in every department who works with cluster conveners; (i) every faculty convener to report to the Curriculum Committee on the status of the cluster every year; (j) the set of clusters revised only once each year.

[iii] This is compatible with current practices. In a sense, the LA/TH distinction already permits two clusters to be taken within a more traditional Humanities division. Further, while the Bowen Commission says that the cluster system was intended to encourage students to pursue interests outside their major or minor, it does not say that clusters should encourage students to pursue an interest outside the *division* in which the major is housed.

[iv] Note that the study includes all seniors, not just those enrolled in language classes. Thus while the data may reflect differences in quality of instruction, they can also be expected to track language enrollments: students taking no classes would, of course, report no improvement, thus bringing the average ranking down.

[v] A residual issue is whether mathematics courses should be used to satisfy an NS requirement. The issue arises because such courses do not involve empirical research or pertain to the natural world. However, there is no other area into which math courses would fit better, and if they are given no area designation, then the math major could not be used to satisfy an area or integrated learning requirement. While a special

arrangement could be made to allow a math major to count as an IL requirement, but not in any area, the result would be that students could, in effect, use that major to substitute for any area (so that it could become LC, SS, or TH, as well as NS). In addition, math majors would have to satisfy distribution area requirements in four areas in addition to their major, whereas other students would only need to do so in three. In light of that, and the fact that mathematics is very important in the natural sciences, the committee has chosen to continue to let math courses count for NS.

[vi] Courses in areas other than the present LA that now carry the CD designation will have two attributes: LC and (e.g.) SS. Students will choose one of the two attributes.

[vii] Actual units for the path that includes three language classes could be as much as 13-15 (two 5-unit introductory classes, plus one 3-unit or one 5-unit 3rd class). Students would not be allowed to place out of the LC requirement through language exams or AP credit; rather such tests would simply place the students in the appropriate level at which to continue their high school language study if they so desire. On the other hand, some flexibility and incentive can be built into the language component by allowing certain study abroad programs and internship to be used for the 3rd semester.

When a student begins with introductory level language classes and proceeds to the 3rd semester, the classes must be sequenced in the sense that earlier classes are prerequisites for later ones, and the classes are in a natural numerical order. (Departments may determine that more than one class follows numerically in this sense.) When a student begins at the 3rd semester level or above, the concept of sequencing may be less strict in some language programs. Various classes taught in the language might be used. Individual departments will determine what is appropriate in this regard. If a student wishes begin the study of a second language after two semesters in the first language (whether the classes are introductory or 3rd semester and above), two semesters of the second language must be taken.

In some cases heritage speakers will be able to start at the intermediate level or above and continue in their native language, where the courses advance their understanding of writing in that language or of cultures other than their own in which the language is spoken.

Additional Proposals Subsequent to the NCRC Report

1. Curriculum Committee: The Implementation Committee should provide an area designation for any major or minor that may not have been accommodated in that regard.

2. Faculty Council: The Implementation Committee should consider the need for more funding for undergraduate research.

Proposed Amendments to NCRC Recommendations

A. A committee should be appointed to begin implementing the NCRC proposals next year.

   The Implementation Committee should provide an area designation for any major or minor that may not have been accommodated in that regard.

   -- submitted by the Curriculum Committee

B. The Implementation Committee should consider the need for more funding for undergraduate research.

   -- submitted by the Faculty Council

C. Section II.2. (a)(i) on p. 6 of the NCRC Report should be revised to read as follows (changes highlighted):

   QA: The requirement should be defined in terms of an ability to use numbers and numerical analyses in connection with problems involving statistical analyses, judgments of probability, evaluation of evidential support, or other applications as indicated in 1.c. above. The new category will be *Numerical Applications* (NA).

   - While courses such as Math 2200 will count as NA, not all basic courses in mathematics (such as Calculus I) should be used in the fulfillment of this requirement.

   -- submitted by David Wright, Chair of Mathematics,
   John McCarthy, Professor of Mathematics
   Ron Freiwald, Professor of Mathematics
   John Shareshian, Professor of Mathematics

D. Section II.2.b. on pp. 6-7 of the NCRC Report should be revised as follows:

Insert new part (ii) to read:

- TH (Textual and Historical Studies) will be redesignated as HUM (Humanities), including text, history, and the arts. Majors and Minors in departments and programs in the College of Arts and Sciences with arts practice courses would be assigned to HUM.

- Subject to the usual Curriculum Committee procedures, courses that would ordinarily be used for a major or minor in HUM could also satisfy the HUM distribution area requirement, even if not used toward the major, the minor, or an integrated learning requirement.

Change existing part (ii) to (iii). Replace the term TH in it (and elsewhere later in the report) with the designation HUM.

-- submitted by Robert Henke, Chair of Performing Arts
Vince Sherry, Chair of English
Marshall Klimasewiski, Director of the Creative Writing Program
Mary-Jean Cowell, Coordinator of Dance
Hugh MacDonald, Interim Chair of Music
Wolfram Schmidgen, Curriculum Committee
Gaylyn Studlar, Director of Film and Media Studies