TEACHERS COLLEGE

COLUMBIA UNIVERSITY

INSTITUTE FOR LEARNING TECHNOLOGIES

A Proposal for a New Media Center for Teaching and Learning at Columbia University

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Objectives

The New Media Center for Teaching & Learning will concentrate on improving the quality of instruction on Columbia's campuses, especially by facilitating efforts by the University's faculty, staff, and students to further its educational mission through the effective use of information and communications technologies.

- Help programs, departments, and schools develop and carry out plans for improving their educational activities through astute use of information and communications technologies.
- Furnish standardized, entry-level tools and services, such as web-templates, to help faculty members use new media technologies in courses and advisement.
- Provide a market-oriented, rapid prototyping service that can help develop initial ideas to the point where they are usable in courses and programs at Columbia and attractive to suitable development and dissemination partners.
- Conduct continuous formative evaluation for specific initiatives with new media in education at Columbia. Enlist faculty members and students experienced in the educational uses of new media as mentors for helping other members of the Columbia community employ new media, and furnish collegial settings for this mentoring.
- Arrange seminars, workshops, and special interest groups for members of the Columbia community who want to reflect on, and collaborate in, efforts to improve education through information and communications technologies. Develop a continuing workshop for the Columbia community for demonstrating interesting educational applications of new media and for analyzing and criticizing the pedagogies implicit in them.
- Carry out selected summative evaluations of mature projects to show how the use of new media influences learning.
- Distill the experience of the Columbia community with new media in education into well-grounded precepts of pedagogical design. Systematize insights into the institutional, pedagogical, and cultural effects of information and communications technologies in education and disseminate findings widely.
- Create and manage an internal venture capital fund that will invest resources in promising educational applications of new media to permit preparing them for commercial distribution.
- Provoke the Columbia community to consider how new media affect public participation in research and scholarship and to reshape strategies for fulfilling Columbia's mission as a great research university.
- Work with AcIS and the Libraries, as well as other New Media groups at Columbia and Teachers College, to coordinate initiatives and to ensure that diverse efforts sum into a strong, University-wide advance.

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Implementation Steps

Management:

- Recruit a professional staff that can provide pedagogic design, implementation assistance, and evaluation services to faculty members, instructors, and students who seek to use advanced technologies in their educational work.
- Secure convenient space for the Center; design the facility; renovate and equip it.
- Initiate a program of services and work to augment base funding through supplements from specific schools and through participation in externally funded projects.

Professional Development:

- Plan and conduct workshops on course customization with digital technologies adapted to the instructional programs of major components of the University and Teachers College.
- Engage key faculty members and administrators in planning how to improve teaching and learning in their subjects through use of new media.

Curriculum Innovation:

- Collaborate with the faculty and staff for a range of important courses to develop ways for using new media to augment course presentation and study resources.
- Work with faculty members to provide easy-to-use, pedagogically sound, electronic templates and tools for the full range of educational interactions characteristic of the University and Teachers College.
- Work with faculty members and the libraries to track and assess the pedagogical value of resources on the web according to discipline and level of instruction. Support faculty members in setting up electronic reserves and other study facilities for courses.
- Provide market-oriented, rapid prototyping support to efforts by instructors and students to design pedagogically effective digital presentations of courses and course components.

New Media Assessment:

- Evaluate whether there are significant differences in expectations, learning styles, capacities, and achievements between students who come to Columbia with high and low levels of experience with information technologies.
- Provide on-going formative assessment to schools, departments, and faculty members engaged in integrating new media into their educational work.
- Conduct summative evaluations designed to show whether mature uses of new media improve the educational effectiveness of significant offerings.
- Systematize knowledge about best practices at Columbia and elsewhere and disseminate a practical understanding of these as widely as possible.

Coordination:

- Establish a faculty and administration advisory board to facilitate consultation with all components of the Columbia community and to promote coordination of effort towards fundamental educational goals by the diverse groups working with new media.

Timeline

Year 1:

Month 1: ILT Co-Directors and Center Advisory Board set priorities for initial program development.
Month 1: Permanent space for Center allocated and renovation plans initiated.
Months 1-10: Start-up staff designated and pre-existing programs continued.
Months 1-10: ILT Co-Directors consult with key groups in process of planning long-term agenda.
Months 1-10: Formative evaluations of at least three educational projects using new media.
Months 1-12: Initial Resource Specialists work to implement key uses of new media in their areas.
Month 5: Complete national search for General Manager, to start work no later than Month 10.
Month 5: Renovation of facility for Center starts.
Month 5: First iteration of Web-templates and similar tools available for use in courses.
Month 7: Initial findings from on-going study of technology and learning characteristics of students.
Month 7: Initial request for curriculum innovation proposals, due Month 9.
Month 10: Complete national searches for full staff, to start work no later than Month 12.
Month 10: Second iteration of Web-templates and similar tools available for use in courses.
Month 10: Selection of curriculum innovation projects, to start Month 13.
Month 10: Selection of at least one project for summative evaluation of effects during Year 2.
Month 10: Selection of at least two projects for market-oriented software prototyping.
Months 11-12: Occupy new facility.

Year 2:

Months 13-22: Full complement of workshops on augmenting courses with digital technologies starts.
Months 13-24: Resource Specialists work to implement key uses of new media in their areas.
Months 13-24: Complete market-oriented software prototyping of at least two projects.
Months 13-24: Formative evaluation of at least five educational projects using new media.
Months 13-24: Summative evaluation of the effect on learning of at least one project.
Month 17: Third iteration of Web-templates and similar tools available for use in courses.
Month 19: Second set of findings from study of technology and learning characteristics of students.
Month 19: Request for curriculum innovation proposals, due Month 21.
Month 22: Fourth iteration of Web-templates and similar tools available for use in courses.
Month 22: Selection of curriculum innovation projects, to start Month 25.

Year 3:

Months 25-34: Full complement of workshops on augmenting courses with digital technologies starts.
Months 25-36: Resource Specialists work to implement key uses of new media in their areas.
Months 25-36: Complete market-oriented software prototyping of at least four projects.
Months 25-36: Formative evaluation of at least five educational projects using new media.
Months 25-36: Summative evaluation of the effect on learning of at least one project.
Months 29: Fifth iteration of Web-templates and similar tools available for use in courses.
Month 31: Third set of findings from study of technology and learning characteristics of students.
Month 31: Request for curriculum innovation proposals, due Month 33.
Month 34: Sixth iteration of Web-templates and similar tools available for use in courses.
Month 34: Selection of curriculum innovation projects, to start Month 37.

Staffing

ILT Co-Directors: Robbie McClintock & Frank Moretti. Work with the University central administration and the leadership of the several schools of the University and of Teachers College, along with departments heads, providers of information services, and faculty members, to plan and oversee a program to develop educationally effective uses of new media in the University and throughout its interactions with other academic, educational, and commercial parties; lead effort to expand the New Media Center for Teaching and Learning beyond its base funding by mobilizing further support for its activities from external sources

General Manager: Under the direction of the ILT Co-Directors, manage implementation of the program to develop educationally effective uses of new media in the University and throughout its interactions with other academic, educational, and commercial parties; oversee the Center's staff and program; consult regularly with participants in the Center's activities to ensure that their needs are both known and satisfied.

Resource Specialists: In consultation with the ILT Co-Directors and the General Manager, work closely with the administration, faculty, and staff of specific academic areas to design and implement activities of professional development and curriculum innovation that advance the educational uses of new media in each area. Resource specialists should be scholar-practitioners who combine intellectual mastery of their field, creative facility with information and communications technologies, and the ability to manage complex cooperative activities. Initial areas:

- Engineering
- Natural Sciences
- Social Sciences
- Humanities
- Education
- Business/Law

Design Manager: Implement the web design and rapid prototyping requisite to sustain the Center's specific educational applications of new media. Develop, maintain, and improve the repertoire of templates and procedures for augmenting courses electronically. Recruit and oversee hourlies and interns needed to execute specific projects.

Systems Manager: Provide good technology forecasting for the effort; order, install, and maintain the Center's development systems; work closely with AcIS and the various schools and departments to ensure that the technological environment available to support the educational uses of new media at Columbia is sufficient, appropriate, and effective.

Evaluation Manager: Design and implement evaluation studies, providing formative feedback and documenting the educational effects of work with new media in Columbia and Teachers College courses. Develop an understanding of how students and their learning patterns are changing as a result of intensive use of information technologies.

Business Manager: Oversee the tracking of expenditures in order to keep activities on budget and to provide the ILT Co-Directors and the General Manager with clear and timely understanding of available resources; coordinate with the financial accounting structures of Columbia University and Teachers College; provide budgeting input on applications for external funding.

Hourlies & Interns: Under the over-all supervision of the General Manager, assist in the execution of specific projects.

Secretarial: Schedule meetings, route queries via phone and email, maintain documents and files, etc.

Facilities and Equipment

Large Group Demonstration: The Center will include a demonstration room suitable for 30 people in seminar format with high-quality display driven Windows, Mac, and UNIX platforms. To be used primarily for awareness building with the faculty of various departments and other groupings, for workshops on course customization, and for group evaluation of products and applications.

Small Group Demo/Design: The educational backbone of the Center will consist of six Demo/Design areas, each managed by a subject-area resource specialist. These will be equipped with development hardware and software oriented to the subject area and laid out to support workgroups of up to 12 members, who can engage in exploring options, generating content, developing designs, and implementing pedagogical strategies.

Project Development Work Area: Supporting the Demo/Design facilities, the Center will have a large area populated with course implementation workstations with access to a full range of centralized software and content resources for use on specific applications projects. During the first year, the Center will put 10 development stations into operation, with 5 more added in each subsequent year.

Shared Production Tools: The Center will equip and keep current an island of specialized production tools -- high-end scanners and digital cameras, digital video and audio equipment, color and high-volume printers, etc.

Distance Education Studio: The Center will allocate substantial resources for distance education, to use in collaboration with other Columbia and Teachers College groups developing the University's capacities to develop and deliver education at a distance. The Center will pay special attention to making those developments useful throughout Columbia's educational programs, both off campus and on, and to exploring the educational uses of Internet 2.

Servers & Networking: The Center will allocate resources to cooperate actively with AcIS and others to provide the appropriate systems infrastructure needed for the smooth delivery of on-line teaching and learning resources to classrooms, dorms, offices, and participants at a distance. This is particularly important in the areas of digital library services, authentication and control, and developing educational uses of Internet 2.

Miscellaneous: Approximately 5% of available equipment funds will be kept in a miscellaneous reserve to enable the Center to respond to unanticipated opportunities.

Deliverables

Workshops: The general manager and resource specialists, in consultation with department chairs and other program representatives, will plan targeted professional development workshops. They will design these with the primary objective of raising levels of awareness of the pedagogical strategies and opportunities for using new media in teaching and learning. These workshops will serve practical goals by providing design and implementation support for using digital technologies in course customization and the creation of enhanced study environments for students. Each resource specialist will develop a workshop agenda for his or her area by the start of the second semester in the initial year, updated by the start of each subsequent academic year. Regular consultation with faculty about their needs will inform the on-going design of these workshops and the evaluation team will regularly produce reports on the degree to which they meet the needs and expectations of participants.

Templates and tools: The Center will develop a suite of tools and templates to facilitate the independent customization of courses with digital resources by instructors and their student assistants. The initial set of templates and tools will become available through the Center's web site by the end of the first semester in the initial year and they will be expanded and updated late in each semester. The evaluation team will conduct regular formative evaluation of the usability of the templates and tools, concentrating on the ways in which they support attainment of the intellectual and educational goals of the programs using them.

Development RFP: Beyond providing tools and templates, the Center will allocate its capacities to support sustained project development work by soliciting project ideas through a Request for Proposals, offering sustained, substantial project design and development support to highly promising projects. The RFP will solicit projects that aim at significant innovations and improvement in teaching and learning at Columbia through the use of new media. Subject area resources specialists will evaluate proposals for their intellectual value and pedagogical promise and make recommendations through the General Manager for selection by the Advisory Board. Projects will receive support in the form of concentrated, sustained design and development assistance through the Center's facilities and staff. A minimum of 12 projects, 2 in each subject matter area, will receive support each year.

Course implementations: In addition to educational applications developed through the RFP process, the Center will support instructors, departments, and schools in further course implementation with its facilities and staff, as other commitments permit, to support the voluntary development of new media course implementations. Will Departments, Schools, and Faculties wish to commit further resources to the Center to expand its project support capacity, the Center will collaborate with those entities to implement their agenda of course implementation.

External project proposals: The General Manager and other staff will collaborate with interested faculty and staff to develop proposals to potential external funders for support of new media applications to education.

Prototypes of marketable tools and applications: The Center will work with Columbia Innovation Enterprises and Columbia New Media Enterprises to bring software prototypes, course implementations, content collections, and on-line tools and templates to market through collaborative arrangements with commercial partners.

Evaluation reports: The evaluation group will provide internal formative evaluation of the above deliverables on an annual basis and will conduct summative evaluations for publication of new media applications to education that have matured and begun to achieve stable results.

Publications, print and electronic: Key participants in the Center will produce scholarly publications, through both traditional media and new media, in an effort to advance knowledge about, and to elicit understanding of, the educational uses of new media. A significant part of the reputation built by the leadership and staff of the Center should derive from their ability to define the ideas shaping practice with new media in education.

Measures of Success

Internal demand: Departments and schools allocate to the Center additional resources so that they can receive design and development services beyond those the Center can provide through its base resources from the central administration.

Student satisfaction: Student and course evaluations show a high level of satisfaction reported by those taking courses supported through the Center.

Evaluation of achievement: Formal evaluations show that students develop their skills, abilities, and knowledge more effectively through courses supported through the Center.

Subsequent performance: The quality of subsequent work by students in courses improves with those improvements attributed to courses supported through the Center by formal evaluations, student self-reporting, and judgments by faculty members.

Employment experience: Students who graduate having developed high levels of skill with new media through courses supported by the Center show greater success rates in the market for first jobs and in applications to graduate and professional schools than do students with low new media skills.

Grant applications: Design and development work supported by the Center leads to it becoming a sought for partner in applications for external support, with a good frequency of subsequent funding and a track record being built for Columbia as a leader in the application of information technologies to the reform of education.

Market presence: Programs, tools, and applications prototyped through the Center reach the market through cooperative development arrangements and return significant income to their faculty creators, the Center, Departments and Schools, and the University.

External partnering: Columbia and the New Media Center for Teaching and Learning prove to be able to be increasingly selective with respect to potential partners in applying new media to education and the scale of the projects supported through such partnerships increases.

Changing academic norms: Academic peers achieve a consensus that they can observe and evaluate a scholar's educational accomplishments using new media in the same ways that they have traditionally been able to observe and evaluate published scholarship, leading to educational excellence becoming effectively integrated into promotion and tenure norms.

Exemplary leadership: Columbia becomes associated among those with informed opinions with distinctive practices in the educational use of new media and with growing number of other institutions trying to emulate Columbia's model.

Operating Budget

	% in Center	Approximate Year 1 Base	Fringe	Year 1 Cost	Year 2 Cost	Year 3 Cost
Robbie McClintock	20%	$100,000	$7,000	$27,000	$28,350	$29,768
Frank Moretti	20%	$100,000	$7,000	$27,000	$28,350	$29,768
General Manager	100%	$90,000	$31,500	$121,500	$127,575	$133,954
Engineering Resource Specialist	100%	$50,000	$17,500	$67,500	$70,875	$74,419
Natural Science Resource Specialist	100%	$50,000	$17,500	$67,500	$70,875	$74,419
Social Science Resource Specialist	100%	$50,000	$17,500	$67,500	$70,875	$74,419
Humanities Resource Specialist	100%	$50,000	$17,500	$67,500	$70,875	$74,419
Business/Law Resource Specialist	100%	$50,000	$17,500	$67,500	$70,875	$74,419
Education Resource Specialist	100%	$50,000	$17,500	$67,500	$70,875	$74,419
Design Manager	100%	$50,000	$17,500	$67,500	$70,875	$74,419
Systems Manager	100%	$50,000	$17,500	$67,500	$70,875	$74,419
Evaluaton Manager	75%	$55,000	$14,438	$55,688	$58,472	$61,395
Resource Manager	50%	$50,000	$8,750	$33,750	$35,438	$37,209
Secretarial	100%	$30,000	$10,500	$40,500	$42,525	$44,651
15 Hourlies, 20 hr/wk @ $12 for 48 weeks				$172,800	$181,440	$190,512
Materials, supplies, and office expenses				$120,000	$126,000	$132,300
Total				$1,138,238	$1,195,149	$1,254,907

Capital Budget

		Year 1 Cost	Year 2 Cost	Year 3 Cost
Large Group Demonstrations	1 location installed Year 1			
Hardware (@ $60K, $10K, & $10K)		$60,000	$10,000	$10,000
Software (@ $20K, $10K, & $10K)		$20,000	$10,000	$10,000
Furniture (@ $20K, $5K, & $5K)		$20,000	$5,000	$5,000
Small Group Demo/Design	6 locations installed Year 1			
Hardware (@ $25K, $5K, & $5K)		$150,000	$30,000	$30,000
Software (@ $17.5K, $7.5K, & $7.5K)		$105,000	$45,000	$45,000
Furniture (@ $7.5K, $2.5K, & $2.5K)		$45,000	$15,000	$15,000
Project Development Work	12 locations installed Year 1			
Hardware (@ $5K, $1K, & $1K)	6 more Year 2	$60,000	$42,000	$48,000
Software (@ $4K, $1.5K, & $1.5K)	6 more Year 3	$48,000	$42,000	$51,000
Furniture (@ $1K)		$12,000	$6,000	$6,000
Shared Production Tools	1 location installed Year 1			
Hardware		$60,000	$30,000	$30,000
Software		$30,000	$15,000	$15,000
Furniture		$10,000	$5,000	$5,000
Distance Education Studio	1 allocation available Year 1			
Hardware & Software		$200,000	$100,000	$100,000
Servers & Networking				
Hardware & Software	1 allocation available Year 1	$200,000	$100,000	$100,000
Miscellaneous	1 allocation available Year 1	$50,000	$25,000	$25,000
Totals		$1,070,000	$480,000	$495,000