



# University of Colorado at Boulder

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## Faculty Hiring Initiatives in the College of Arts and Sciences

During the late Fall and Spring terms of the 2005-2006 academic year the College undertook an exercise to solicit ideas for investing new tenure track faculty positions in areas that would benefit the research and teaching synergies that exist among units of the College and units outside the College. The intent was to stimulate conversations among units on campus that would result in identification of emerging areas of scholarship and proposals where key appointments could facilitate interdisciplinary teaching and research across multiple departments and programs.

The process of solicitation was followed by a two-stage review process involving the chairs and directors of the college as reviewers. The call for proposals resulted in 48 submissions. Round one reviews resulted in promotion of 34 proposals into a second round of reviews. After a brief period of revision by the 34 submission teams, round two reviews identified approximately two dozen proposals as having the highest merit. A final step of review was undertaken by the deans of the College, who considered proposal redundancy and curricular needs and organized a final set of 20 proposals into four thematic hiring initiatives for the College.

Over each of the next five years the College anticipates hiring approximately 35-40 new faculty into vacant faculty lines resulting from the normal retirement and turnover of appointments. Many of these vacancies will be filled "in-kind", as the small size of our tenure track faculty relative to our student population means that most faculty lines have already been invested in areas prioritized to be central to the research, training, and teaching missions of the College. However, some number of these existing positions, and new faculty positions invested in the College through Chancellor and Provost faculty investment initiatives will be directed towards making progress in four strategic areas of new scholarship and scholarship that builds on strengths already present in the College. It is through these investments that the College will reach many of its strategic goals and enhance the national profile of the Boulder campus. The four hiring initiatives are summarized below.

### **Globalization of the Humanities and Social Sciences**

We live in a time of globalization. Economic, cultural, and political interactions among societies have shed their societal and geographic constraints and now are played out upon a global stage. This relatively recent development alters the

way we look at literature, language, and culture, and necessitates that we accelerate the changes that we have already made to reflect globalization in our scholarship and teaching. We intend to invest in scholars who can document and contribute to our understanding of the heritage of Islam, and in the languages and culture of contemporary Muslim societies. We intend to add to our existing strengths in Jewish Studies, and hire scholars who can discuss the moral and ethical issues that global trade and interaction presents. Globalization worldwide stimulates cultural and linguistic heterogeneity in our own country, and we will strengthen our bilingualism and second language acquisition expertise. Cultural and linguistic heterogeneity is a frequent casualty of globalization, and we will use our expertise in indigenous languages and cultures to preserve and understand some of this heterogeneity. We propose an investment of approximately 26 FTE in this initiative, which will involve departments and programs such as AAH, ANTH, ALC, ENGL, FILM, GEOG, GSLL, HIST, INAF, CLAS, LING, PHIL, PSCI, RLST, SPAN, SLHS, and WMST and will offer potential collaboration with SJMC and Ethnomusicology. This initiative is based upon the following A&S initiative proposals:

- Ancient Literature and Symbolism
- Asia and the Muslim World
- Bilingualism
- Documentary & Ethnographic Filmmaking
- Global Ethics
- Globalization and Democratization
- Indigenous Cultures and Languages
- Jewish Studies

## **BioScience Innovation and Integration**

The College of Arts and Sciences has a timely opportunity to integrate its expertise in several areas of the life and physical sciences to make an interdisciplinary thrust at some of the challenging biomedical problems of our times. Our Initiative in the Biosciences will invest in the exploration of questions at both ends of the human lifecycle - development and aging, and will also invest in the methodologies and technologies that will enable us to move our creation of basic knowledge to application and clinical reality. We will exploit our considerable expertise in developmental neuroscience, memory acquisition and neural cell connectivity across 3 different departments and the organizing features of the Center for Neurosciences to address questions of neuroendocrine function, synaptogenesis and the roles of stress, alcohol, and other stressors on early and pubescent brain development and language acquisition. At the other end of life, our core of faculty working in the science of aging across five different departments represents an opportunity to invest in an integrated program that can address the basic biology and health issues of aging such as cardiovascular disease, cancer, biomechanical and communicative complications of stroke, osteoarthritis, and diabetes. The College has already begun to invest in Biotechnology as part of this broader initiative in Bioscience innovation. The campus Biotechnology Initiative takes a strong interdisciplinary approach to creating new knowledge and new technologies that can address these

fundamental questions. We propose to invest 20 FTE in this initiative, of which the Provost, A&S, and Engineering have already committed 5. This initiative will involve programs and departments such as APPM, CHEM & BIOCHEM, IPHY, MCDB, LING, PSYC, SLHS and will have strong collaborative relations with IBG, CompSci, and CHEM & Biological Engineering, and perhaps NIST and JILA. This initiative is based upon the following A&S initiative proposals:

Augmentive and Assistive Communication  
Human Developmental Neuroscience  
Integrated Biology of Aging  
Molecular Biotechnology Initiative

### **Integration of Scholarship and Education**

A common philosophy behind most of the College's hiring initiatives is that by identifying areas of scholarly expertise and opportunity, we will build the best and most productive research faculty. Following this philosophy will also provide the best graduate training and undergraduate education as a natural byproduct of faculty excellence. However, there are a number of faculty investment opportunities that build on features of *educational excellence* on the Boulder campus that make for compelling cases for investment on their own merits. Science education and residential academic programming are two areas of existing excellence that will benefit from FTE investment. The Boulder campus has developed a nationally recognized strength in science education because of early investment by Physics and the School of Education. Activities on campus in this area are at their peak, and five science departments have signed on to proposals to include more discipline-based science education expertise within their faculties, benefiting both our own students and K-12 education. Our set of Residential Academic Programs is another example of educational excellence and is a signature feature of the Boulder undergraduate experience. We have an opportunity offered by Housing's planned renovation of residential buildings to enhance the residential academic programs through the involvement of more tenure-track faculty in RAP teaching. We propose to roster faculty in select departments where they will conduct research and graduate training, but their undergraduate teaching will be dedicated to RAPs in order to maintain national prominence in this area. We also intend to pursue two interdisciplinary hiring initiatives involving Law and Economics in one case, and between the sciences and the humanities on the other. In the first instance the collaboration offers unique graduate training in an area of economic regulation and law and a potential MA program not currently possible, and in the second case a humanities-science hiring collaboration offers both graduate and undergraduate training in the history and philosophy of science that will benefit students at both ends of the disciplinary spectrum by their mentoring from interdisciplinary scholars in this area. We propose to invest 18 FTE in this initiative, and involve departments such as APS, EEB, CHEM, CLAS, ECON, HIST, MCDB, PHIL, PHYS and collaborations with EDUC and LAW. This initiative is based upon the following A&S initiative proposals:

CADRE (CO Alliance for Discipline-based Research in Education)  
History and Philosophy of Science  
Law and Economics

## **Energy Transformation, Climate, and the Environment**

The United States in the 21<sup>st</sup> Century faces as one of its most complex challenges the establishment of energy resources and technologies less dependent upon geopolitical and environmental constraints. Anthropogenic impacts on the environment are driven by our use of carbon-based fuels and water and these impacts need creative minds and technologies to mitigate them. Solutions to these problems will require creativity in areas of chemistry, physics, engineering, environmental sciences, economics, mathematical modeling and other areas. Fortunately, the Boulder campus and the community of national labs has enormous depth and reputation in the environmental sciences, atmosphere and climate sciences, making investment in this traditional strength of the Boulder campus a wise strategy. We propose a multidisciplinary approach to investment in this area. On the technological side, A&S proposes to collaborate with Engineering in a Materials Sciences and Engineering initiative whereby A&S will invest in faculty that can lead the development and characterizations of possible energy transformative materials for CO<sub>2</sub> fixation, solar harvesting, bioenergy transformation, and energy storage mechanisms utilizing inorganic catalysts, solid state materials, and nanoparticle synthesis. Our orientation will be towards basic science and technologies that further the national agenda in renewable and biofuel development. Energy extraction and use has profound impacts on our world and regional environment, and so we intend to invest in areas of climate modeling, environmental science and policy, and the role of water in biogeochemistry and ecosystem cycling. This initiative intends to integrate physical science technology creation with ecological and social science interrogation of the issues surrounding energy use and our environment. This initiative will call for the investment of 15 FTE in A&S and will involve departments and programs such as ATOC, CHEM, ECON, EEB, ENVS, GEOL, GEOG, HIST, PHYS, SOCY and will collaborate with CHEN, CEAE, and institutes such as CIRES and INSTAAR. This initiative is based upon the following A&S initiative proposals:

Advanced Materials for Energy Efficiency  
Energy and the Environment: Transformative Energy  
Environmental Studies Initiative  
Initiative in Atmospheric and Oceanic Sciences  
Water Resources