

# Report of the Ad-Hoc Committee on Public Health at UCSC

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## Executive Summary

- California already faces a shortage of public health professional schools and that shortage will grow. In January 2007, the Advisory Council on Future Growth in the Health Professions reported to President Dynes that without action public health workforce needs will exceed educational capacity at existing UC public health schools. The Council recommended that new students be accommodated first within existing infrastructure and then at campuses where there is interest but where some new level of infrastructure will be required. The Advisory Council recommended an increase of approximately 180 percent in masters student enrollments by 2020, from 648 students to 1823, and parallel increases in doctoral student enrollments from 279 students to 785 by 2020.
- UCSC has a number of characteristics that can allow us to mount a unique effort in public health. These include indisputable fame in genome work, a school of engineering where biology, statistics and information management are emphases, excellent faculty in the environmental sciences areas, a long and rich tradition of student involvement in real-world problem solving, and a highly ranked faculty in the social sciences with a focus on environment, science and medicine, and social justice. We believe that a School of Public Health can be operational by academic year 2014 and that a Masters in Public Health, which is essential for a School of Public Health, can be operational long before that.
- Schools of Public Health are accredited by the Council on Education for Public Health (CEPH) and fixed requirements must be met. Although we already have a considerable amount of the talent needed to meet the requirements, it is not clear that we have the will on the part of the faculty or administration. Because Public Health is a fundamentally interdisciplinary field, mounting a program at UCSC will require a heretofore-unseen level of decanal cooperation and Senate flexibility. The true level of faculty interest is still unknown, even though there was good attendance at the two meetings in Spring 2007.
- The CEPH accreditation process requires 24-30 months from start to approval. The CEPH defines a professional degree as one that requires 2 years of study that “prepares students with a broad mastery of the subject matter and methods necessary in a field of practice; it typically requires students to develop the capacity to organize, analyze, interpret and communicate knowledge in an applied manner.” The core areas of knowledge and study that are required by the CEPH for the MPH are biostatistics, epidemiology, environmental health sciences, health services administration and social and behavioral sciences.
- A gap analysis shows that we have great strength on the campus in all areas except epidemiology, but that our strength is unevenly distributed. Whether faculty are willing to do the necessary teaching to fulfill the needs of such a professional program is another matter.

- In light of these issues, we propose an incremental approach, which at each step will test the commitment of the faculty, The Academic Senate, and the administration in its commitment to a School of Public Health.

Our proposed process is:

- Spring 2008: We propose forming a Graduate Group (in the UCB, UCD model) of those interested in public health, with the possible name of Graduate Group in Global Public Health (GGGPH). Requirement for membership in this group will be the willingness to offer, as an overload, a 2 unit graduate seminar every third year. If there is insufficient faculty interest, the process stops. If the Graduate Council or the Committee on Planning and Budget cannot conceive of a truly interdisciplinary graduate group on the Santa Cruz campus, the process should stop.
- Academic year 2008-2009: The faculty in the GGGPH prepare a proposal for a professional MPH degree. During this year, the GGGPH conducts an internal seminar in which faculty explain their research interests in public health to colleagues. If attendance at this seminar series is woefully low, the process stops. The planning of this graduate degree will require hard and concentrated thinking so that we ultimately offer an accredited, professional MPH that is also unique to UCSC. We suggest that the centerpiece of the MPH be a 30 unit (10 units per quarter for three quarters) core course taken by all students, to provide broad and general training. This class will be complemented by in-depth training in one or more tracks associated with public health. Such tracks could include: Adaptive Management of Disease Interventions; Bayesian Epidemiology; Developmental Origins of Disease; Food and Health Policy; Health and the Aging Population; Health System Informatics; Genomics and Ethics; Maternal and Post-natal Health; Multicultural Health; The Politics of Medicine; and Water Resources and Public Health.
- We estimate that the proposal for an MPH degree will require the commitment of 6 quarters of TAS support for 3 years, a practicum coordinator, a part-time staff person and space for 40 students and faculty. The TAS support will be used to release faculty from their regular teaching commitments to teach in a 10-unit core course. We will also need faculty to teach electives, some of which can arise from existing courses, but some of which will likely arise de novo. Thus additional curriculum support may be required. If this support cannot be obtained, the process should stop.
- We search for two epidemiologists (one in AMS, one in ETOX – both are in the current hiring plans).
- Academic year 2009-10: The proposal moves off campus for approval. We search for faculty in 1) health organization and management and 2) demographic and organizational social science related to health problems.

- Academic year 2010-11: The first cohort (20 students) is admitted, the CEPH accreditation process is initiated, and planning for a School of Public health is initiated, with planning to admit the first students in 2013-14.

## **Introduction**

California already faces a shortage of health professionals. In its final report, The Advisory Council on Future Growth in the Health Professions (Anonymous 2007) (ACFGH) noted that (pg 4):

The Council believes that public health workforce needs will exceed current educational capacity at existing UC public health schools and recommends that new students be accommodated first within existing infrastructure and then at both campuses where there is interest but where some new level of infrastructure will be required. The Council believes that even with significant infrastructure support, unmet demand will warrant planning toward the future establishment of at least one new School of Public Health.

The recommendations of the ACFGH included:

To respond to serious and growing deficiencies in the state and national public health workforce, UC should expand opportunities for preparing future public health professionals to work in settings and disciplines of greatest need. The Council recommends an increase of approximately 180 percent in masters student enrollments by 2020, from 648 students to 1823. The Council also recommends parallel increases in doctoral student enrollments from 279 students to 785 by 2020.

Public health schools have until recently, trained their students in traditional issues such as medical policy, hospital organization and management, and public sanitation. In its report (Anonymous 2007) the ACFGH defined public health in a more contemporary way, as “the science and art of promoting health, preventing disease, prolonging life, and improving quality of life for the general population” (pg 41); also see Nuffield Council on Bioethics (2007). According to the ACFGH, the newest principal areas of focus of the public health system are health surveillance, protection, and promotion; policy development, and regulation; and the organization, delivery, and evaluation of health services delivered to individuals and populations. Gebbie et al. (2003) describe three major public health challenges for the 21<sup>st</sup> Century: 1) globalization and accompanying environmental changes leading to the transmission of microbes and viruses and the distribution of products associated with major health risks; 2) the advances in science and medical technology that are changing the way medicine can be practiced but cannot affect the mortality caused by social and behavioral factors; and 3) demographic changes that include an aging population, deceleration of mortality trajectories at the largest

ages, greater lifetime exposure to toxics and racial and ethnic health disparity. Furthermore, in the 21<sup>st</sup> century we need to reduce health care costs by reducing the demand for medical services through ‘health promotion’ and ‘preventive care’ (Fries et al 1993).

We believe that UCSC is uniquely positioned to create a school of public health to train students to meet these challenges. UCSC has many strengths that will enable us to mount a unique program in Public Health. These include indisputable fame in genomics; a school of engineering that emphasizes applied mathematics, biology, statistics, and information management; great strengths in the environmental sciences; a long and rich tradition of student involvement in real-world problem solving as exemplified by a very high Peace Corp involvement [8<sup>th</sup> among medium schools in 2007]; and a #1 ranked social science faculty (Graham and Diamond 1998), with a number of faculty already pursuing research related to local and global health matters.

Our main recommendation, however, is that we begin by offering a Master of Public Health (MPH) degree. For that reason, the majority of this report concerns how to move forward on that degree.

The MPH must include a core curriculum that satisfies the requirements of the accrediting body (the Council on Education for Public Health (CEPH); <http://www.ceph.org/i4a/pages/index.cfm?pageid=1>). To complement that core, we highlight a variety of tracks that would make a UCSC MPH relatively unique. Some of these tracks are

- Adaptive Management of Disease Interventions
- Bayesian Epidemiology
- Developmental Origins of Disease
- Food and Health Policy
- Health and the Aging Population
- Health System Informatics
- Genomics and Ethics
- Maternal and Post-natal Health
- Multicultural Health
- The Politics of Health and Medicine
- Water Resources and Public Health

### **Long Term Strategy: A School of Public Health**

We believe that a School of Public Health can be operational by academic year 2014-15. Ultimately, creation and implementation of specific themes would be the responsibility of the founding Dean and faculty, as the school is built up through hires. However, we also believe that it is best to consider themes of research, service and teaching that engage the current faculty and build on our existing capabilities. The reports of the committees that met in Spring 2007 to consider a potential public

health school/curriculum give us some idea of existing capabilities and interests. Some of the themes that might emerge in a School of Public Health include:

- A science of new technologies, such as nanotechnology and stem cell technology, to solve health problems (de Grey 2004).
- The health implications of global warming and environmental change.
- Epidemiology, with a focus on data from multiple public systems -- criminal justice, medical, behavioral health.
- The relationship between demographic changes – such as declining mortality rates -- and social policy in the 21<sup>st</sup> century (Wachter and Finch 1997).
- Discovering appropriate risk assessment and decision making tools for use with epidemiological data (Phillips and Goodman 2004).
- The relation between scientific and popular views of health and wellness (Fábrega, 1997).
- Successful health industry organizational governance models.
- The relationship between social inequality and health (Farmer 1999).
- The psycho-social determinants of health (e.g. what are the relative contributions of genetics and environment to diabetes, hypertension, or schizophrenia?).

A School of Public Health is an ambitious undertaking. It will require resources. It will also require serious institutional innovation, specifically new forms of organizational interaction. Schools of Public Health are accredited by the Council on Education for Public Health. Eligibility requirements for a School of Public Health include:

- An independent structure and reporting mechanism that is equivalent to other professional schools or colleges within the university;
- Offering the MPH or equivalent professional degree programs in at least the five basic areas of public health knowledge [these will be described below]... or provide specific plans and timeline demonstrating that they will be in place with graduates in each program area at the time of the site visit or within two years of the application date, whichever comes first;

- Having at least five full-time faculty who are trained and experienced in the discipline for each core concentration area offering a doctoral degree and at least three full-time faculty plus two full-time-equivalent faculty in core concentration areas offering only the MPH or equivalent professional degree by the time of the site visit or within two years of the application date, whichever comes first; and
- Offering three doctoral degrees in public health disciplines, with students enrolled in all three and a graduate from at least one by the time of the site visit or within two years of the application date, whichever comes first.

Before embarking on such a long-term project, however, we propose to test the interest of colleagues (in both faculty and administration) and demonstrate the potential of a school of public health through a MPH in Global Public Health.

### **Short-Term Tactics: Begin with a Professional Master of Public Health.**

Public health is a fundamentally interdisciplinary field, which requires us to stretch the boundaries of departments and disciplinary structure. Offering an MPH will require a heretofore-unseen level of decanal cooperation and of flexibility on the part of the Academic Senate. In addition to not knowing whether these can be achieved, we also do not know the level of faculty interest (even though there was good attendance at the two meetings in Spring 2007).

#### *The MPH is a Professional Degree*

The CEPH sees the MPH as the primary professional public health degree and that a professional degree is one that “prepares students with a broad mastery of the subject matter and methods necessary in a field of practice; it typically requires students to develop the capacity to organize, analyze, interpret and communicate knowledge in an applied manner” (CEPH Criterion 2.0; to be found at <http://www.ceph.org/i4a/pages/index.cfm?pageid=3371>) and that it should take 2 years of full-time study. The professional degree can be contrasted to an academic degree, which is one that “prepares students for scholarly careers, particularly in academia and other research settings; it typically prepares students to investigate, acquire, organize, analyze and disseminate new knowledge in a discipline or field of study.”

#### *The MPH has a Required Core*

The areas of knowledge and study that are required by the CEPH for the MPH are

“*Biostatistics* – collection, storage, retrieval, analysis and interpretation of health data; design and analysis of health-related surveys and experiments; and

concepts and practice of statistical data analysis;

*Epidemiology* – distributions and determinants of disease, disabilities and death in human populations; the characteristics and dynamics of human populations; and the natural history of disease and the biologic basis of health;

*Environmental health sciences* – environmental factors including biological, physical and chemical factors that affect the health of a community;

*Health services administration* – planning, organization, administration, management, evaluation and policy analysis of health and public health programs;

*Social and behavioral sciences* – concepts and methods of social and behavioral sciences relevant to the identification and solution of public health problems.”

To this list, we believe the area *Health Policy and Ethics* should be added– the investigation of the complex questions about the relationship between the state and the individuals and organizations affected by its policies, the duties of individuals to each other, and the relationships of duties and entitlements (Nuffield Council, 2007). This recommendation is in accord with those from Gebbie et al (2003).

The CEPH requirements include:

**Practical Skills: All professional degree students must develop skills in basic public health concepts and demonstrate the application of these concepts through a practice experience that is relevant to the students’ areas of specialization.**

**Interpretation:** The school must provide opportunities for professional degree students to apply the knowledge and skills being acquired through their courses of study. Practical knowledge and skills are essential to successful practice. A planned, supervised and evaluated practice experience is therefore an essential component of a public health professional degree program.

These opportunities can take place in a variety of agencies or organizations but should include especially local and state public health agencies to the extent possible and appropriate. An essential component of the practice experience is supervision by a qualified preceptor who is a public health professional. Schools must have well-defined learning objectives, procedures, and criteria for evaluation of the practicum. Individual

waivers, if granted, should be based on well-defined criteria; the possession of a prior professional degree in another field or prior work experience that is not closely related to the academic objectives of the student's degree program should not be sufficient reason for waiving the practice requirement.

While there are advantages to a practice experience conducted full-time in a concentrated block of time, this is not always possible for students. Schools should be sensitive to the constraints of students and may develop alternative modes for providing practice experiences. If the student can do a placement only in his or her regular place of employment, the assignment must extend beyond or be something other than his or her regular work duties and allow application of knowledge and skills being learned. There should be regular assessment and evaluation of practice placement sites and preceptor qualifications.

**Culminating Experience: All professional degree programs identified in the instructional matrix shall assure that each student demonstrates skills and integration of knowledge through a culminating experience.**

**Interpretation:** A culminating experience is one that requires a student to synthesize and integrate knowledge acquired in coursework and other learning experiences and to apply theory and principles in a situation that approximates some aspect of professional practice. It must be used as a means by which faculty judge whether the student has mastered the body of knowledge and can demonstrate proficiency in the required competencies. Many different models are possible, including written or oral comprehensive examinations, supervised practice placements, and a major written paper. While the practice experience and the culminating experience are often separate requirements, it is possible to integrate the two experiences.

In those instances when the practice experience also serves as the culminating experience, it is essential that these assignments be planned and implemented to assure that the student applies skills from across the curriculum and demonstrates synthesis and integration of

knowledge. Ordinarily a major project or analytical paper would be a component of the practice experience, comparable in rigor to other culminating experiences. The evaluation of the practice experience takes on special significance when it is also used as the culminating experience, since this may be the sole means by which assessment of the required competencies is achieved.

### *Our Ability to Cover the Core*

Our ability to cover these topical areas varies. In Biostatistics, we have excellent resources in information storage, retrieval, analysis and interpretation, excellent background in survey design and statistical concepts and practice but fewer resources in health-specific biostatistics applications. In Epidemiology, we have good resources in the environmental history of disease but fewer resources in natural history, demography, and modeling of the dynamics of disease. In the Environmental Health Sciences, we have good resources in the empirical connection between environmental exposures and disease outcomes but fewer resources in modeling and statistics of such outcomes. In Health Service Administration, we have good resources in policy analysis and public health policy but fewer resources in health informatics, management and operation, and organizational analysis. In the Social and Behavioral Sciences, we have excellent resources in social problems as related to health and sociology of health, sexuality, and obesity but fewer resources in demographic and organizational social science expertise related to health problems.

To be more specific about our current strengths and weaknesses, we now offer a gap analysis, showing our strengths (as represented by existing courses) and holes in the areas required for offering a MPH. That we list existing courses should not be understood as an argument that our current course offerings can suffice for the MPH; rather the listing demonstrates our talents and strengths (and highlights our weaknesses) in each area.

1) Epidemiology: Epidemiology is the study of the distribution and determinants of the frequency of disease in human populations, and the application of this study to control problems of public health (Aschengrau and Seage III, 2008). A modern version of such a course should merge demography, traditionally the statistical studies of vital rates in human populations, and evolutionary thinking (Mangel 2006). We currently lack such a course at UCSC, but with appropriate release time faculty currently on campus, or arriving shortly, could develop one.

Such a course can be taught in AMS (by M. Mangel, indeed AMS 215 Stochastic Modeling in Biology could be adapted to become such a course) or EEB (by M. Kilpatrick after July 2008). However, no specifically titled courses are on the books

at this point. ETOX and AMS both have epidemiologists in their hiring plans; Kirlpatrick qualifies as one, and many mathematical biologists do as well.

2) Biostatistics: Although we currently do not have upper division or graduate level courses in BioStatistics, the faculty in AMS are prepared to launch such a course, using curricula similar to those in sister campuses.

Courses representing our strength in this area include

Applied Mathematics and Statistics 205, Mathematical Statistics

Applied Mathematics and Statistics 206, Bayesian Statistics

Applied Mathematics and Statistics 207, Intermediate Bayesian Statistical Modeling

Applied Mathematics and Statistics 216, Stochastic Differential Equations

Applied Mathematics and Statistics 221, Bayesian Decision Theory

Applied Mathematics and Statistics 223, Time Series Analysis

Biomolecular Engineering 205, Bioinformatics Models and Algorithms

Biomolecular Engineering 230, Computational Genomics

Information Systems Technology Management 207, Random Process Models in Engineering

3) Environmental Health Sciences: There are clearly gaps to be filled here, particularly in the biology of global health. Courses representing our strengths in this area are:

Environmental Toxicology 138, Biology of Disease

Environmental Toxicology 144, Groundwater Contamination

Environmental Toxicology 145, Medical Geology

Environmental Toxicology 201. Sources and Fates of Pollutants

Environmental Toxicology 202, Cellular and Organismal Toxicology

Environmental Toxicology 210, Molecular and Cellular Basis of Bacterial Pathogenesis

Sociology 173, Water

4) Health Services Administration. Courses representing our strength in this area are

Economics 156, Health Care and Medical Economics.

Information Systems Technology Management 205, Management of Technology

Information Systems Technology Management 209, Knowledge Services & Data Analytics

Information Systems Technology Management 245, Data Mining

Information Systems Technology Management 250

Information Systems Technology Management 260, Information Retrieval

LALS 194K, Drogas en la Historia y la Cultura de las Américas (Taught in Spanish)

Sociology 121S, Health Care Policy and Politics

Sociology 126, Sociology of Sex

Sociology 166, Economics for Non-Economists.

Sociology 184, Hunger and Famine.

5) Social and Behavioral Sciences. Courses representing our strength in this area are:

Anthropology 194C, Food and Medicine.

Anthropology 194M, Special Topics in Medical Anthropology.

Community Studies 100K, Culture and Health

Community Studies 100M, Health Care Inequalities.

Community Studies 121, Health and Human Rights in Prison.

Community Studies 145, Politics of Obesity.

Community Studies 148, Women's Health Activism.

Feminist Studies 152, Feminist Perspectives on Global Health/Reproduction

LALS 175, Migration, Gender, and Health.

Psychology 169, Community Mental Health

Psychology 140C, Health Psychology.

Sociology 121, Sociology of Health and Medicine.

Sociology 127, Drugs in Society

Sociology 264, Science, Technology, and Medicine.

**6) Health Policy and Ethics:** Courses representing our strength in this area include:

Biomolecular Engineering 247, Stem Cell Research: Scientific, Ethical, Social and Legal Issues.

Community Studies 100F, Public Health.

Economics 259B, Public Policy Analysis.

Legal Studies 128, Poverty and Public Policy.

Philosophy 150, Medical Ethics.

Philosophy 245, Brave New World: Ethical Issues in Genetics

## Sociology 282, Social Policy Research

One way to summarize the above is to ask which existing courses might be transportable to at least the tracks, if not the core of a MPH. These are

Topic	Number of Existing Courses that Could Be “Transported” To the Tracks of a MPH	
	Upper Division	Grad
Biostatistics	0	9
Epidemiology	0	0
Environmental Health Science	4	3
Health Service Administration	6	5
Social and Behavioral Sciences	13	1
Health Policy and Ethics	3	4

### **The Route to a MPH**

#### *Winter/Spring 2008: Form The Graduate Group in Global Public Health*

We recommend that in Winter and Spring 2008, the Graduate Group in Global Public Health (GGGPH) is formed. Our belief is that all health issues are now both global and public. Almost by definition, the purpose of public health is to take care of communities, rather than individuals. In the 21<sup>st</sup> century communities may span multiple spatial scales, making health global. Immigration, world travel, and climate change all bring global considerations to even the most local health questions (Gebbie et al 2003, Lopez et al 2006). Similarly, health issues are now intricately interagency and international in legal aspects. The large societal investment in the development of private medicines through makes even apparently private health public.

The GGGPH should have a chair and executive committee that will be open to all Academic Senate faculty who have an interest in the area of Public Health, are committed to teaching in the MPH program, and will offer a 2 unit seminar in their

specialty as it applies to public health at least once every 3 years. It will be the responsibility of this faculty, in 2008-09, to develop a proposal for the MPH in Global Public Health. The guidelines concerning “Interdepartmental Program Charters and Faculty By-Laws” are listed in Appendix A.

We also recommend that early on the GGGPH appoint an external advisory committee for consultation, development in the financial sense, and development in the intellectual sense. An analogue is the Dean’s Advisory Committee for the Baskin School of Engineering.

If there is insufficient interest on the part of the faculty in this graduate group, or the Graduate Council and the Committee on Planning and Budget cannot conceive of a truly interdisciplinary graduate program on the Santa Cruz campus, the process should stop.

*Academic Year 2008-2009: Develop the MPH Proposal, Commit Resources, and Search for Epidemiologists*

During this year, the GGGPH conducts an internal and local talent audit (including community members who could be appointed as adjunct faculty to GGGPH, so that local practitioners will be involved in teaching students) seminar series, in which we get to know each other and our interests in public health in more detail. If attendance at this seminar series is woefully low, the process stops. Because local practitioners will be both busy and often without experience in formal teaching, we will involve Science Education faculty in helping our adjunct faculty hone their teaching skills.

The faculty in GGGPH will have to think very hard about whom we are aiming to train and what they need to know. For example, do we envision our graduates involved in direct patient care, further post-graduate studies, running health plans, hospitals or community programs, as health educators or as physician extenders? We will not be able to do everything, but what we decide to do we should do very, very well. Furthermore, we need to consider whether our target population is returning or working professionals or newly graduated students.

Also during this year, the faculty in the GGGPH will prepare a proposal for a professional MPH degree. We believe that the core of the MPH should be a 30 unit (10 units per quarter for three quarters) core course taken by all students. This course will provide a broad overview of the field of public health. Students must complement this broad generalist background, however, with solid training in a depth area.

Tracks associated with the MPH will emerge from faculty interests. Some possible tracks include:

- Adaptive Management of Disease Interventions
- Bayesian Epidemiology

- Developmental Origins of Disease
- Food and Health Policy
- Health and the Aging Population
- Health System Informatics
- Genomics and Ethics
- Maternal and Post-natal Health
- Multicultural Health
- The Politics of Health
- Water Resources and Public Health

Regardless of track, because this is a professional degree, students must be involved in actual research on an applied project with real data (that they collect or are given). They need to learn how to begin with a problem in public health, conduct an analysis using data, and then interpret the results in terms of the health problem. Such professional training may use simple methods but will require that they are applied in mature ways.

At initiation, the MPH degree will require at least the commitment of 6 quarters of TAS support for 3 years, a practicum coordinator, a part time staff person and space for 40 students and faculty. If this support cannot be obtained, the process should stop.

We believe that there is much to be gained by investigating coordination and conjunction with UCSF, which does not have a school of public health. With appropriate communication technology, we can strengthen both the tracks of our MPH and provide an expanded set of offerings to students at UCSF and UCSC.

In this year, there will be searches for epidemiologists in AMS and ETOX; this is the minimal cluster hiring that one can imagine. These new hires will complement colleagues with interests in epidemiology (Kirlpatrick, Mangel, Rodriguez).

*Academic year 2009-10: The Proposal Moves Off Campus*

In this academic year, the proposal will move off campus. At the same time, we will begin a seminar series where the majority of speakers are off-campus visitors.

We will search for faculty in 1) health organization and management and 2) demographic and organizational social science related to health problems.

*Academic year 2010-11: First Cohort Admitted and CEPH Accreditation Begins*

In this year, we admit the first cohort (20 students), the CEPH accreditation process will be initiated, and planning for a School of Public Health will be done. At this point, we do not add professional fees to the graduate fees paid by the students.

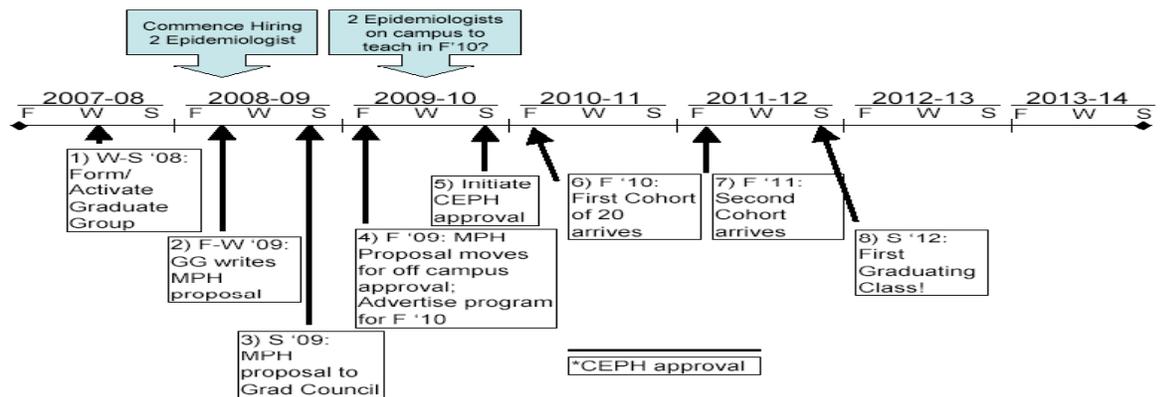
*Academic year 2012-13: Professional MPH Established*

By June 2013, we will have graduated the first cohort of students and CEPH accreditation will be completed. Thus, incoming students will pay \$4000 (the current UC-wide professional fee for public health) with 100% of these professional fees are passed back to the program. A steady state of 60 students enrolled in the MPH (30 in each year), will thus provide operating funds of \$240,000.

CEPH accreditation of the School of Public Health begins.

*Academic Year 2014-15: The School of Public Health Opens.*

We have laid out an ambitious, but feasible (if the will of the faculty, Senate, and Administration is there) plan that can be summarized in this time line



Clearly, there is much to be done, and not a moment to be lost. But the target is can be achieved as long as we keep our eyes on the prize.

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## Appendix A

### INTERDEPARTMENTAL PROGRAM CHARTERS AND FACULTY BY-LAWS

The *program charter* specifies the membership, governance mechanisms, and resource funding of the program faculty. Charters are resource and management contracts that are agreed to by the executive officers of relevant administrative units. The purpose of the charter is to guarantee resource and management stability for interdepartmental or interdivisional programs. Charters must accompany new program proposals when the primary instructional resources of the program are allocated to more than one department.

The completed and signed charter shall be appended to the program proposal, and shall include the information below. Additional elements may be added by faculty participants or campus administration to suit the program particulars.

#### 1. Program Definition

- a) Identify the degree program proposal supported by the charter.

#### 2. Program Faculty

- a) Identify the program faculty members.
- b) Identify the cognizant academic division and associated reporting authority.
- c) Append the faculty by-laws, which stipulate governance structure, faculty duties, and voting protocols.

#### 3. Resources

Specify which department and/or division is responsible for allocating specific resources, including, but not limited to:

- a) Teaching and course offering commitments, including potential leave replacements.
- b) Teaching assistants, readers, and tutors.
- c) Staff and administrative support.
- d) Space needs, including faculty and staff offices, laboratories, seminar rooms, *etc.*
- e) Equipment and supplies, including computers, telephones, furniture, *etc.*

#### 4. Program Review

Interdisciplinary *undergraduate* degree programs will be reviewed according to established campus review guidelines, and incorporated into the administering department's review. Interdisciplinary *graduate* degree program reviews may be incorporated with an administering department's review, or conducted independently. For graduate programs, please state which review mode is proposed and why.

#### 5. Program Discontinuance

Specify how the degree program will be gracefully discontinued if student demand does not justify its continuance or if faculty interests change. Specify the approximate schedule for phaseout.

## **6. Signatories**

The charter should be signed by the following: the chairs of all departments from which contributions of resources are considered essential; the academic deans to whom these departments report; and the academic dean responsible for program oversight.<sup>1</sup> These persons sign as executive officers of their units, and the departmental and divisional resources (but not individual faculty members) are bound by the agreement.

## **7. Amendments**

The charter may be amended, in ways that do not have substantial resource or curricular implications, by agreement among the signatory bodies. Amendments that have substantial resource or curricular implications should be approved by CEP for undergraduate programs or the Graduate Council for graduate programs. Proposed amendments should be submitted by the cognizant academic dean to the Vice Provost for Academic Affairs who will coordinate Academic Senate consultation.

## **8. Oversight**

The cognizant academic dean ensures that the terms and agreements of the charter are fulfilled. To this end, the designated division will maintain and update a list of the program faculty members, and will be the office of record for the charter and any subsequent amendments.

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<sup>1</sup> Resources include courses, faculty time, administrative assistance, space, instructional support, and any other required resource.

## SAMPLE BYLAWS

The following text is a sample set of bylaws for hypothetical graduate interdisciplinary degree programs in Coastal and Marine Policy, administered by the Department of Earth Sciences, within the Division of Physical and Biological Sciences. This is by way of example; actual by-laws should of course be tailored to the needs of the program.

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### COASTAL AND MARINE POLICY

#### FACULTY BYLAWS

##### PROLOGUE

The Coastal and Marine Policy program faculty shall administer a graduate program of instruction and scholarship leading to the M.A. and Ph.D. degree in Coastal and Marine Policy, in accordance with the bylaws and the regulations of the UCSC Academic Senate and Graduate Division.

##### ARTICLE I. ORGANIZATION AND APPOINTMENT OF THE PROGRAM FACULTY

###### Principal Faculty

The *principal faculty* shall be responsible for proposing, modifying, and possibly discontinuing the Coastal and Marine Policy M.A. and Ph.D. degree programs, including amending to the by-laws and the charter.

Principal faculty members are appointed by the dean of the Division of Physical and Biological Sciences, upon nomination by a current member of the principal faculty, and upon a vote by the principal faculty. The Dean of the Division of Physical and Biological Sciences may terminate the appointment of a principal faculty member, upon the advice of the principal faculty.

The privileges and duties of the principal faculty are as follows:

1. Teaching required core courses and elective courses.
2. Service on standing committees and *ad hoc* committees.
3. Supervision of M.A. and Ph.D. candidates.

###### Associate Faculty

The *associate faculty* shall contribute to the teaching, advising, and research mission of the program, but will not bear the administrative and governance duties of the principal faculty. Associate faculty members are nominated and elected by the principal faculty. Associate faculty membership may be terminated by a vote the principal faculty.

##### ARTICLE II. COMMITTEES OF THE FACULTY

###### Executive Committee

An *executive committee*, comprising five members of the principal faculty, shall administer the M.A. and Ph.D. program, in accordance with the bylaws and the approved charter proposal. The executive committee shall communicate reports of its work to the principal faculty at least semi-annually.

The executive committee shall be appointed by the dean of the Physical and Biological Sciences Division in consultation with the principal faculty. At least two members of the committee shall be tenured faculty appointed to the Earth Sciences Department, and the remaining members shall be tenured faculty who may be appointed to other departments. Executive committee members serve for a term of five years, renewable by the Dean of the Physical and Biological Sciences.

The executive committee chair represents the executive committee and principal faculty members to the Dean of Physical and Biological Sciences and to the Earth Sciences Department Chair. Chair appointment shall be made by the Physical and Biological Sciences Divisional Dean in consultation with executive committee members. Chair appointment shall be for a three-year (academic year) renewable appointment.

### **Standing Committees**

Standing committees shall consist of members of the principal faculty and shall be appointed by the executive committee in consultation with the principal faculty. These include:

- a) Admissions committee: The Admissions Committee reviews the files of all applicants for admission, and recommends qualified applicants to the dean of the Division of Graduate Studies. Criteria for admission to the Coastal and Marine Policy M.A. and Ph.D. program, as defined in the program proposal, shall conform to University of California graduate degree program requirements.
- b) Candidacy committee: The Candidacy Committee reviews the files of all students nominated for advancement to candidacy, and recommends qualified candidates to the UCSC Dean of Graduate Studies.
- c) Curriculum committee: The curriculum committee shall propose all changes to the required and elective Coastal and Marine Policy M.A. and Ph.D. program curriculum. Course sponsorship shall remain vested in the Earth Sciences Department and in those departments with which courses are cross-listed.

### **Ad Hoc Committees**

Dissertation Committees: Per the program described in the proposal, each doctoral candidate shall have a three member dissertation committee comprised of one director and two readers. At least two members of the dissertation committee shall be either principal or participating program faculty members. Dissertation committee appointment shall follow procedures and policies established by the UCSC Graduate Division.

## **ARTICLE III. ACADEMIC ADVISING**

- a) Each member of the principal faculty shall be willing and available to serve as an academic adviser.
- b) The chair of the executive committee shall appoint an academic advisor to each incoming student. Faculty advisers may also be replaced upon the formal request of the student or faculty member.
- c) Upon a student's advancement to candidacy, the chair of the executive committee shall appoint a dissertation supervisor to the student. The dissertation supervisor may be replaced upon the formal request of the student or current advisor.

#### **ARTICLE IV. MEETINGS**

- a) The chair of the executive committee, in consultation with the principal faculty, shall call such regular and special meetings as are deemed necessary or desirable. There shall be at least two regular meetings per year.
- b) The chair of the executive committee shall be responsible for circulating draft minutes of regular and special meetings within four weeks of each such meeting. Minutes shall be approved at the next regularly scheduled meeting.

#### **ARTICLE V. QUORUM**

Meetings of the principal faculty shall be noticed seven days or more in advance *via* email or regular mail. Fifty-one percent of the principal faculty members shall constitute a quorum of a meeting. Unless otherwise provided for in these by-laws, the meetings shall be conducted according to the most recent edition of Robert's Rules of Order. Minutes of previous meetings shall be approved by a simple majority.

#### **ARTICLE VI. AMENDMENTS**

These Bylaws shall conform to the standards of the UCSC Academic Senate and UCSC Graduate Division. All policies and procedures for admission, candidacy, and dissertation filing shall conform to the *UCSC Graduate Student Handbook*.

These bylaws may be amended as necessary when and if approved in a mail ballot by a two-thirds majority of the full principal faculty membership.

## APPENDIX B: CONSULTATIONS WITH PUBLIC HEALTH PRACTITIONERS

In the course of our work, we consulted with a number of public health practitioners and local physicians:

Noel Fishman, MD: Dr. Fishman holds a MD from UCLA and was on the faculty at UCSF (Professor of Surgery) from 1967-1984 and then on the staff at Carmel (Israel) Hospital (1984-87). Since 1987 he has been practicing cardiac and thoracic surgery in Santa Cruz; he established cardiac surgery here.

Jonathan Gell, MD: Dr Gell holds a MD degree from Brown University and completed a Fellowship in Rheumatology at Harvard University. He has been practicing medicine in the Rogue Valley, Oregon since 1980. There he has been in private practice for about a dozen years and medical director of Rogue Valley Memorial Hospital for about another dozen. He is currently a hospital internist.

Brett Hauber, PhD: Dr. Hauber is the Senior Economist and Head of the Health Preference Assessment at RTI Solutions (<http://www.rtihs.org/>) in North Carolina. He holds a PhD in environmental economics from the University of Delaware and worked for the Office of Management and Budget before joining RTI.

Grace Laurencin, MD, MPH: Dr. Laurencin holds both MD and MPH degrees from Boston University and completed a residency at UCSF and a 2 year fellowship in family medicine. She has been practicing in Santa Cruz since 1990

Robert Ratner, MD, MPH: Dr. Ratner holds an MD from UCSF and a MS and MPH from the UC Berkeley School of Public Health. Since 2000, Dr. Ratner has directed programs that integrate housing with health services for homeless and formerly homeless adults with disabilities; currently he is director of such services for Alameda County. He also currently serves as a volunteer instructor for a UC Berkeley service learning course and program known as the Suitcase Clinic.

## APPENDIX C: OTHER PUBLIC HEALTH PROGRAMS IN CALIFORNIA

### I. UCB School of Public Health

#### A. Six Divisions

##### 1. Biostatistics

*Biostatistics is a discipline concerned with the development of statistical principles and methods and their application to problems in the medical, biological, and health sciences. A broad knowledge of biology and a solid understanding of statistics are fundamental to successful training in biostatistics.*

##### 2. Community Health and Human Development

*The mission of the Division of Community Health and Human Development (CHHD) is to foster interdisciplinary teaching and research on developmental epigenesis: that is, how biologically based differences in individual susceptibility and resistance work together with social, physical and cultural environments to influence the emergence of disease and the preservation of health over the human life course.*

##### 3. Environmental Health Sciences

*Environmental factors are estimated to be responsible for 25-40 percent of the burden of human ill-health around the world and often most seriously affect the most vulnerable members of society, such as young children, pregnant women, and the poor. The EHS curriculum prepares students to assess the health impacts of physical, chemical, and biological agents in the environment and workplace and to explore means for their measurement and control.*

##### 4. Epidemiology

*Epidemiology is concerned with the study of factors that determine the distribution of health and disease in human populations.*

##### 5. Health Policy and Management

*Health Policy & Management (HPM) trains graduates for positions of senior-level leadership in health services policy and management and to conduct research and disseminate knowledge that will advance the organization, financing, and delivery of health and medical services.*

##### 6. Infectious Disease

*The study of infectious diseases focuses on those interactions between infectious agents, their human and other hosts, and the environment, that may lead to disease in human populations.*

#### B. Degrees and Programs

##### 1. Degree associated with one of the above divisions

a. Biostatistics M.A. or Ph.D.

b. Community Health and Human Development

1) Joint MD MPH with UCSF (also Stanford)

2) Health and Social Behavior (MPH)

3) Maternal and Child Health MPH (one and two year) and Dr. PH

4) Public Health Nutrition (MPH, PhD or Dr. PH)

c. Environmental Health Sciences—MPH, Dr. PH

d. Epidemiology MPH (one and two year), MS, PhD

e. Health and Policy and Management: MPH, Combined Public Policy Degree (MPP/MPH), Combined MBA Health Management Degree

- f. Infectious Disease MPH, PhD
- 2. Cross Divisional Ones/Programs
  - a. Epidemiology/Biostatistics combined MPH
  - b. Health Services and Policy Analysis Ph.D.
  - c. 11 month Interdisciplinary MPH for mature scholars
  - d. Preventative Medicine Residency (for MDs), with UCSF
- 3. They also have the following Specialty Areas—essentially a minor to the two year MPH or Ph.D.
  - a. Aging
  - b. International Health
  - c. Maternal and Child Health
  - d. Multicultural Health

## **II. CSU San Francisco and CSU San Jose**

Both offer only one MPH degree in Community Health Education. Three year program for working professionals

## **III. UCLA School of Public Health**

- A. Five Departments. All offer MPH, MS, Ph.D. and Dr. PH
  - 1. Biostatistics Community
  - 2. Health Sciences same
  - 3. Environmental Health Sciences
  - 4. Epidemiology
  - 5. Health Services.
- B. Other interdepartmental or transdepartmental programs:
  - 1. Housed at School of PH
    - a. Environmental Science& Engineering: D.Env
    - b. Molecular Toxicology: Ph.D.
  - 2. Joint programs with other departments
    - a. Public Health MPH/Asian American Studies MA
    - b. Public Health MPH/ Islamic Studies MA
    - c. Public Health MPH/ Law JD
    - d. Public Health MPH/ Management MBA
    - e. Public Health MPH/ Social Welfare MSW
    - f. Public Health MPH/ African Studies MA
    - g. Public Health MPH/Latin American Studies MA
    - h. Public Health MPH/ MD

## **IV. UCD Department of Public Health Sciences**

- A. Degrees
  - 1. MPH
    - a. Description: *The UCD MPH program is designed for people interested in disease prevention and community health. The program includes instruction in epidemiology, biostatistics, environmental and occupational health, health services and administration, and social and behavioral science, and prepares students for an*

*expanding range of professional opportunities and roles in public health and medicine.*

b. Emphases:

- 1) Epidemiology
- 2) Nutrition
- 3) Environmental and Occupational Health
- 4) Human and Zoonotic Infectious Diseases
- 5) Veterinary Public Health
- 6) General Public Health

c. Links to core curriculum: <http://mph.ucdavis.edu/CoreCurriculum.php>

d. Links to electives: <http://mph.ucdavis.edu/Electives.php>

e. Links to practicum info: <http://mph.ucdavis.edu/Practicum.php>

2. The same department offers also Ph.D.s in Biostatistics, Epidemiology, and Pharmacology and Toxicology

## **V. SD State Graduate School of Public Health**

A. Degrees

1. Offers an MPH with various concentrations
  - a. Biometry (applied biostatistics)
  - b. Environmental Health
  - c. Epidemiology
  - d. Health Promotion
  - e. Health Services Administration
2. Offers the following joint degrees
  - a. MPH/MSW
  - b. MPH/MA Latin American Studies
  - c. MPH/MD and residency associated degrees

## **VI. Loma Linda School of Public Health**

A. Degrees

1. Offers an MPH with various concentrations.
  - a. Biostatistics
  - b. Environmental Epidemiology
  - c. Environmental and Occupational Health
  - d. Environmental Health Specialist
  - e. Geographic Information Systems for Environmental Health
  - f. Geographic Information Systems for Global Health and Development
  - g. Global Health
  - h. Health Education
  - i. Health Policy and Leadership
  - j. Maternal and Child Health
  - k. Medical Epidemiology
  - l. Public Health Nutrition
  - m. Public Health Nutrition + Dietetics
  - n. Public Health Practice
  - o. Research Epidemiology

- p. Spatial Epidemiology
- 2. Offers the following joint or combined degrees
  - a. Global Epidemiology
  - b. Global Health + Maternal and Child Health
  - c. Health Services Research
  - d. Maternal and Child Health + Health Education
  - e. Nutritional Epidemiology
  - f. MPH/MS Health Education/Marital and Family Therapy
  - g. MPH/PsyD Maternal and Child Health/Social Work
  - h. MPH/MSW in Maternal and Child Health/Social Work
  - i. MPH/DDS Health Education/Dentistry
  - j. MPH/MD

#### **VII. UC Irvine**

UCI has an undergraduate program (currently offers a B.S. in Public Health Sciences and a B.A. in Public Health Policy). “The proposal for the Graduate Program in Public Health is currently underway and information will be made available as it arrives. Currently the Program is anticipating on a Fall 2008/Winter 2009 start date for the Graduate Degree. Interested students for the undergraduate programs can contact: 949-824-6861.”

#### **VIII. Google searches for other UCs and public health suggests those schools don't have on-site public health programs.**

- A. UCR—no program
- B. UCM—no program
- C. UCSF—some joint programs with UCB MPH
- D. UCSD—some joint programs with CSSD MPH

#### **IX. Other Cal State Schools do have Public Health Programs:**

- A. CSU Northridge (MPH in Health Education)
- B. CSU Longbeach (MPH in Community Health)
  - These are detailed in Appendix A of the Spring Quarter 2007 Grad School Report.
- C. CSU Fresno has an MPH with two emphases (Health Promotion and Health Policy Management).
- D. CSU Fullerton has an approved MPH but couldn't find much about it
- E. CSU San Bernardino has an MPH with emphasis in Community Health Education

**X. These Cal State Schools do not offer MPH degrees:** Chico, Bakersfield, Channel Islands, East Bay (formerly known as Hayward), Humboldt, Los Angeles, Maritime, Monterey Bay, Pomona, Sacramento, San Luis Obispo, San Marcos, Sonoma State, Stanislaus.