

California State University  
**Northridge**

**M.S. Degree Program in  
Environmental and Occupational Health**

**Self Study for the National Environmental Health  
Science and Protection Accreditation Council (EHAC)**

**2006-2007**

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## **A. Introduction**

1. Program: Department of Environmental and Occupational Health
2. School: College of Health and Human Development
3. Institution: California State University, Northridge
4. Contact: Thomas H. Hatfield, R.E.H.S., Dr.P.H.  
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California State University  
Northridge CA 91330-8285  
email: [thomas.hatfield@csun.edu](mailto:thomas.hatfield@csun.edu)  
phone: 818-677-4708  
fax: 818-677-2045
5. Chair: Same as above
6. Dean: Helen Castillo, Ph.D., R.N.  
(Administrator who signs for the institution)

**B. Official Signatures** (signed document is shown on p. 47)

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Thomas H. Hatfield, Dr.P.H., R.E.H.S. Chair, Department of Environmental and Occupational Health	Date
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Helen Castillo, Ph.D., R.N. Dean, College of Health and Human Development	Date
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## C. Brief History of our Program

The EOH Program was established within the Department of Health Science in 1965. The first B.S. and M.S. degrees were awarded in 1969. During the earliest years, all courses specific to the EOH Program were taught by part-time faculty from local agencies and academic institutions.

By 1970, program enrollments had advanced to where a fulltime position was authorized for a program director. That position was filled by Dr. Dennis Kelly during the academic year 1970-1971, with the new EOH Director formally assuming administrative and teaching responsibilities in the fall of 1971.

The program was fully accredited by the California Department of Health Services in 1972 and has retained that approval to the present. Full accreditation by EHAC (Environmental Health Accreditation Council, known then as the National Accreditation Council for Environmental Health Curricula) was awarded to the B.S. degree program in 1973. The M.S. degree program was fully accredited by EHAC in 1978 and the B.S. degree program received re-accreditation at that time. Both the undergraduate and graduate degree programs were again reaccredited in 1987, 1995, and 2002.

**No discussion of our department is complete without mentioning diversity.** Nearly half of the university's graduates are diversity students. With a total student population of over 34,000, our university ranks 11<sup>th</sup> in the nation for the total number of degrees awarded to diversity students. At the department level, our program is by far the most diverse in the nation among EHAC accredited programs:

- We have the largest number of Hispanic students (nearly half the national total).
- We have the largest number of diversity students indicating "other" (e.g., students of multiple ethnicities), making up nearly 2/3 of the national total.
- We have the largest total number of diversity students -- our program alone comprises roughly 1/4 of the national total, and we have more diversity students than 18 of the accredited programs combined.

Significant changes since our last accreditation include:

- Our program was elevated to departmental status in July 2002.
- In 2005, Dr. Dennis Kelly retired, and Dr. Victor Liu (Industrial Hygiene) resigned.
- In 2006, our department received approval to fill a new tenure track position.
- New labs have been remodeled in the Engineering Complex, and the building has been renamed Jacaranda Hall.
- ABET accreditation was initially granted for the B.S. degree in EOH in 1997, and continues through 2009-2010.

## D. Mission, Goals, Objectives

**Mission Statement:** The Department of Environmental and Occupational Health (EOH) provides students with a comprehensive base of knowledge and skills in the recognition, evaluation and control of conditions that can adversely impact human health and the environment. Students will have a solid foundation of basic science, a large body of practical knowledge and a basic set of skills that they can apply on the job. We offer all students, whatever their focus of study, this broad academic foundation. Our students will be instilled with a respect for learning, a desire to continue learning, a commitment to the field of Environmental and Occupational Health and a solid ability to work in interdisciplinary teams. Our students and alumni represent a group of people who have a desire and commitment to effect a positive change in the world.

### Goals and Objectives:

We have as specific goals for the department:

- Local employers will value EOH Graduates and recruit EOH graduates because of their solid and up to date academic training and field experience.
- Graduates will pursue and achieve registration and certification appropriate to their career paths.
- Graduates will join professional societies and assume leadership positions in those societies. They will be motivated in part by their desire to be active, and to make a positive difference in the world in which they live.
- Graduates will value lifelong learning (for example, BS Graduates will pursue continuing education or progress to MS; MS graduates will pursue continuing education or doctoral degrees).
- Graduates will contribute to EOH through equipment donations or financial donations, and by supporting an alumni association.
- Graduates will value their education from CSUN. They will recommend to others this career path, and recognize the academic value of EOH at CSUN.

The Master of Science in Environmental and Occupational Health is based on the foundation provided by the BS-EOH from CSUN. All graduate students must demonstrate that they have this foundation by having their transcripts reviewed during the application process. Students from other majors (e.g., Biology) are required to complete additional coursework to meet this standard and are not advanced to classified graduate status until completion of these courses (see our undergraduate self study for more details). The MS – EOH curriculum provides a foundation of research skills and advanced education that leads to enhanced skills in leadership, communication (written and oral), critical thinking, research, and potential for growth over and above what is expected of a bachelor's degree. We believe the MS degree demonstrates a commitment to advanced study and continued learning on the part of graduates. The quality of our graduates is reflected in the success they have achieved in the field of EOH.

## Learning Objectives

Graduates of the graduate program in Environmental and Occupational Health should be able to:

1. Apply knowledge of research design and analytical skills to critically evaluate scientific, technical, and regulatory documents.
2. Present information to professional groups, regulatory agencies, and lay audiences using oral, written, and electronic communication skills.
3. Demonstrate a sufficient level of technical expertise in environmental and occupational health to competently solve general EOH problems.
4. Demonstrate a broad set of management skills to:
  - a. Competently manage an environmental or occupational health and safety program.
  - b. Initiate program planning and critical analysis of environmental or occupational health and safety programs.

## E. Curriculum

### 1. Evaluation

We do not rely on any single measure for evaluating the success of our graduates. Furthermore, we believe that informal measures can be extremely useful (e.g., feedback from employers, internship preceptors, professional organizations, and the alumni themselves, all of whom offer positive and constructive feedback). Nevertheless, we follow a number of outcome indicators for ongoing evaluation of program success:

- National Science Foundation data show that among universities granting M.S. degrees, CSUN is one of the nation's top universities in preparing students who later earn doctoral degrees. At the university level, CSUN ranked **second** in the nation among more than 550 such colleges and universities for the decade 1995 to 2004 (see [http://www.csun.edu/pubrels/press\\_releases/summer06/nsfrank.html](http://www.csun.edu/pubrels/press_releases/summer06/nsfrank.html) ).
- Students must pass all courses in the major with a grade of "B" or better. Average g.p.a. trends are shown on the next page – the dashed lines represent graduate students. The trends appear to be fairly stable, and the slight deviations on the graph are not statistically significant.
- The wide range of employment is reflected in our listing of employed alumni later in this report (see p. 40). Employers continue to value our graduates – indeed, they constitute our advisory committee.
- Our graduates have a success rate of over 70% on the state REHS exam (Registered Environmental Health Specialists). According to the California Department of Health Services, this is among the highest pass rates for environmental health programs in California.
- Our graduates continue to play leadership roles in our local professional groups, particularly the California Environmental Health Association, and the Southern

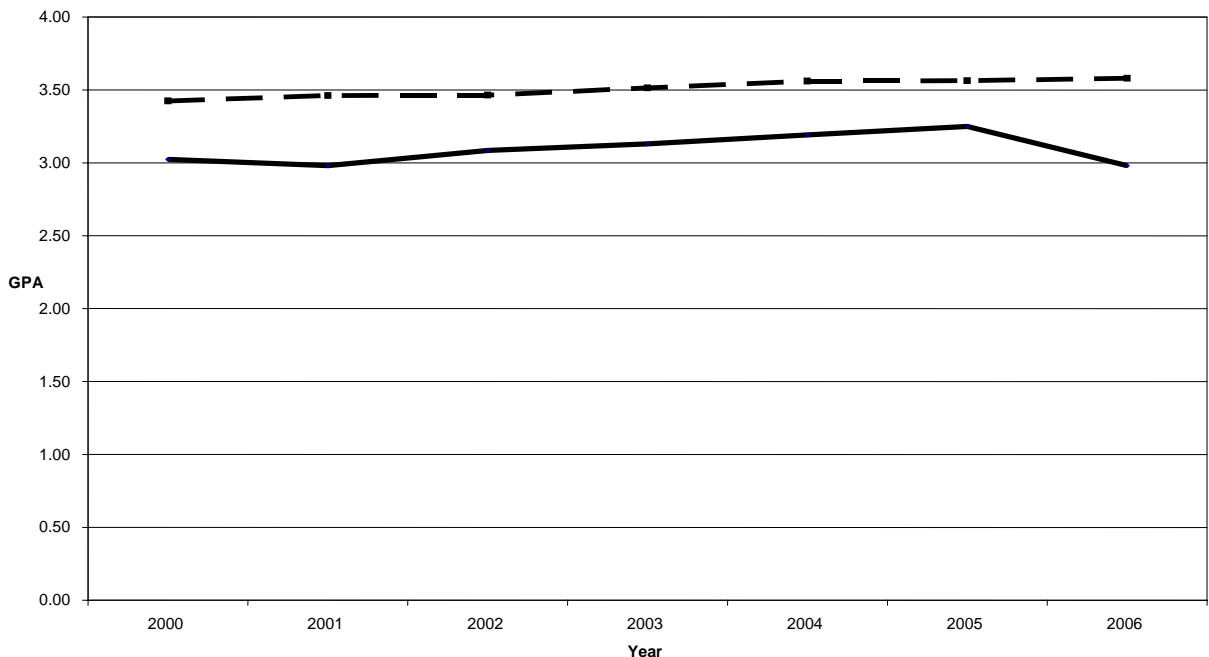
California section of the American Industrial Hygiene Association. The largest memberships in each of these local groups continue to be CSUN graduates. Our student group, the Environmental and Occupational Health Students Association, has been increasing in activities and overall membership in the last several years.

- Our graduates continue to pursue education, either through graduate studies or continuing education. This is reflected in the large portion of graduate students in the program – about half -- who come from our baccalaureate program.
- We continue to receive donations from alumni, with an increase in our accounts this year due to new donations from Lockheed and Exxon Corporations. Our alumni association is larger and more active than ever before as reflected in the increased number of events over the last several years (three “speed mentoring events”, and extensive participation in our jobs symposium.
- Alumni continue to refer students to our program and complement our recruitment efforts. Indeed, after a national drop in enrollments (and in our program), our department enrollments have increased for the last 4 years.
- Our comprehensive exams continue to be upgraded to incorporate more elements of assessment, and clear feedback on the areas we need to improve. For example, we are stressing writing skills more than ever before.

Thus, the evidence shows that we are meeting our mission, goals, and objectives. Course content is updated on a continual basis, and all the above measures are evaluated on an ongoing basis. See also “evaluation of faculty performance” for student evaluation of teaching.

### **GPA by graduate/undergraduate majors**

**(Dashed line is graduate; Solid line is undergraduate)**



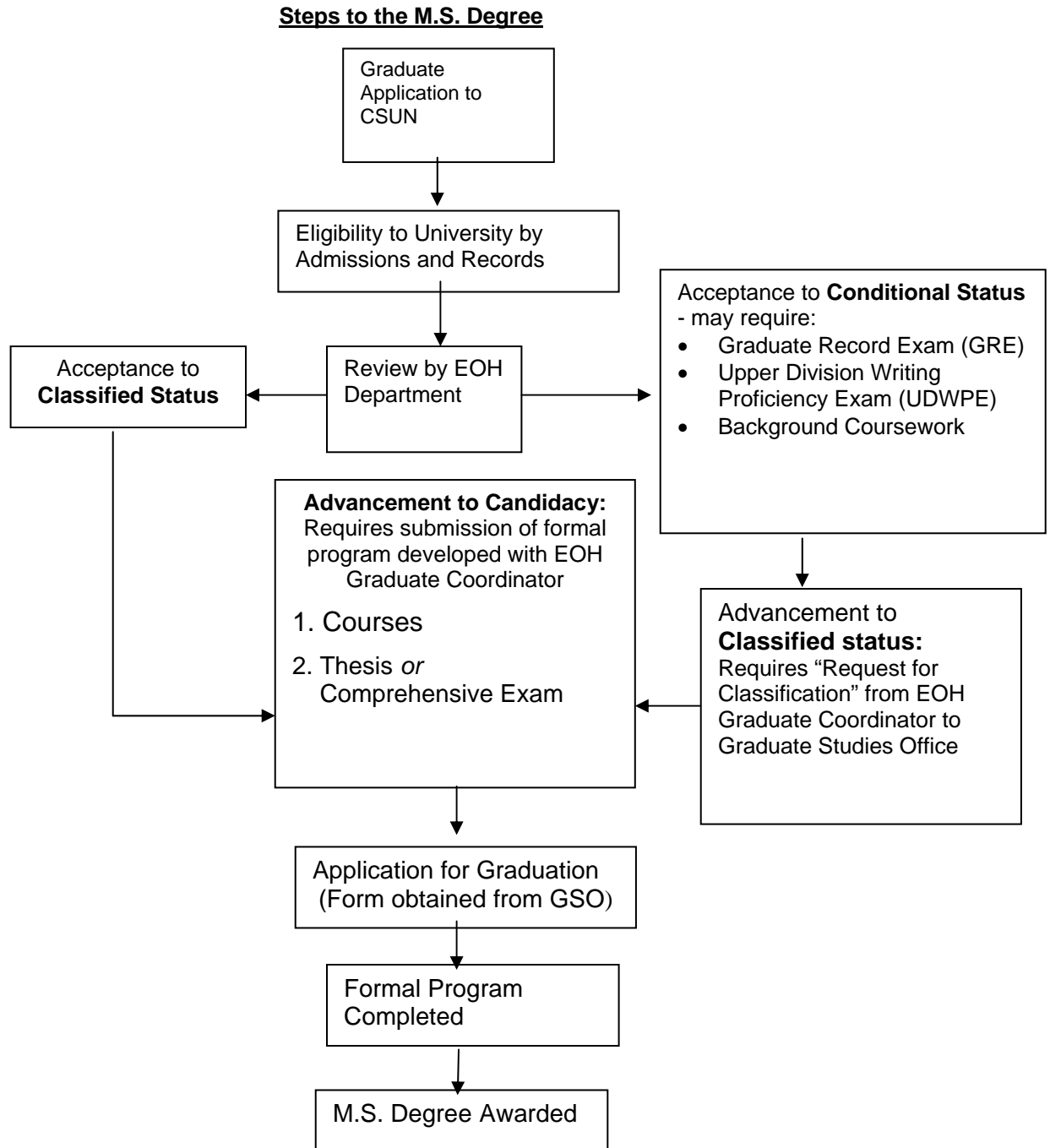


## **Responsive to mission, goals, and objectives**

Our mission, goals, and objectives call for “a comprehensive base of knowledge,” and “a basic set of skills that they can apply to the job.” In keeping with the EHAC graduate guidelines, this entails development in research, problem solving, and planning.

- Research is reflected in EOH 694 and 696 (Research Design and Research Design Seminar).
- Problem solving is reflected in EOH 554 and 694a (EOH Problems Seminar and Supervised Field Training).
- Planning is reflected in EOH 553 and 555 (Administration of EOH Programs and Seminar on Standards and Programs).

## 2. Integration and sequence of courses



Notes:

1. Only 12 units of coursework acceptable towards the M.S. Degree may be taken before classification.
2. Background coursework taken in conditional status does not count towards the M.S. Degree.

### 3. M.S. Degree Requirements

#### Prerequisites:

Prerequisite courses (or equivalencies) -- required for status as a classified graduate student -- are listed in the matrices below.

#### Natural Sciences

Course Designation	Course Name	Semester Credit Hours	Principal Instructor(s)
BIO 106/L BIO 107/L BIO 215 Or BIO 101 BIO 281, 282 EOH 455/L	Biological Principles I Biological Principles II Intro. Microbiology Or Introductory Biology Human Physiology, Lab Microbiological Hazards in EH		Numerous
CHEM 103 CHEM 104 CHEM 235 Or CHEM 101/L CHEM 102/L CHEM 333 CHEM 334	Introductory Chemistry I Introductory Chemistry II Intro. Org. Chemistry Or General Chemistry I General Chemistry II Principles of Org. Chem. I Principles of Org. Chem. II		Numerous
PHY 100A/L PHY 100B/L	General Physics I and Lab General Physics II and Lab		Numerous
MATH 105	Pre-Calculus		Numerous

#### Communication Skills

All students must pass the Upper Division Writing Proficiency Exam (UDWPE), a university-wide requirement.

#### EOH Prerequisites

HSCI 488	Epidemiology	3	Madison, Rosenblatt
HSCI 390, L	Biostatistics, lab	3	Madison, Chu Rosenblatt
EOH 456	Industrial Toxicology	3	Machado
EOH 356A EOH 356B	Environmental Health I Environmental Health II	3 3	Hatfield Hatfield
EOH 352	EH Policy, Law, and Administration	3	Seiver
EOH 356B EOH 456	Environmental Health II Industrial Toxicology	3 3	Hatfield Machado
EOH 356A EOH 456	Environmental Health I Industrial Toxicology	3 3	Hatfield Machado
EOH 466A	Occupational Health	3	Bellin

**Required Core Courses** (for classified graduate students):

Course #	Required Courses	Units	Instructor(s)
EOH 553	EOH Administration	3	Sullivan
EOH 554	Seminar: EOH Problems	3	Machado, Seiver, Schillinger
EOH 555	Seminar: EOH Programs and Standards	3	Schillinger, Sullivan
EOH 693A	Supervised Field Training (180 hours)	2	Schillinger
EOH 695	EOH Research Design	4	Madison
EOH 696	Seminar Research Methods	3	Madison

**Electives:** Must select 4 courses; one course must be 500 or 600 level

Community Environmental Health Option (Select any 4 courses)

EOH 453	Housing	F	3
EOH 454	EOH Law	Sp	3
EOH 455/L	Microbiological Hazards in Environmental Health	F Sp	3/1
EOH 457	Water Supply and Sewage Disposal	Sp	3
EOH 458	Vector Control	F	3
EOH 459	Hazardous Materials and Waste Management	F	3
EOH 468	Air Pollution and Health	Sp	3
EOH 469	EOH Risk Analysis	Sp	3
EOH 560	EOH Epidemiology	Sp	3
EOH 570	Occupational Ergonomics	F	3

Industrial Hygiene Option

EOH 466B,L	Evaluating the Occupational Environment	F	3/1
EOH 466C	Controlling the Occupational Environment	Sp	3
EOH 465	Occupational Safety	F	3
EOH 560	EOH Epidemiology	Sp	3
EOH 570	Occupational Ergonomics	F	3

**Thesis or Comprehensive Exam:**

EOH 698C	Thesis	3
EOH 697	Comprehensive Exam	3

**Notes:**

- A minimum of 30 semester units is required for the M.S. Degree.
- All courses are offered within the Department. Course equivalencies in outside departments and outside universities are considered on a case by case basis.
- Required courses and electives (i.e., all courses in the graduate program) are for classified graduate students. All students must meet prerequisites before being advanced to classified status.

OFFICE OF GRADUATE STUDIES  
CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

PROGRAM FOR MASTER OF SCIENCE DEGREE  
ENVIRONMENTAL AND OCCUPATIONAL HEALTH

OPTION: \_\_\_\_\_

NAME \_\_\_\_\_ ID #: \_\_\_\_\_  
 ADDRESS \_\_\_\_\_ PHONE \_\_\_\_\_  
 CITY, STATE, ZIP \_\_\_\_\_ E-MAIL \_\_\_\_\_

PRINT CLEARLY AND LEGIBLY

COURSE #	COURSE TITLE	UNITS	TRANSFER	GRADE	DATE
<b>REQUIRED COURSES (18 UNITS)</b>					
EOH 553	Administration of EOH Programs	3			
EOH 554	Seminar: EOH Problems	3			
EOH 555	Seminar: EOH Prog. Stand. & Ctrls.	3			
EOH 693A	Supervised Field Training	2			
EOH 696A	Research Design for EOH	4			
EOH 696B	Seminar: Research Methodology	3			
<b>ELECTIVES (12 UNITS)</b> Selected after consultation with Graduate Advisor Must include at least three units from one of the following: EOH 560, EOH 565, EOH 570					
EOH 697	Directed Comprehensive Studies	-	(SUBJECT CREDIT ONLY)		
EOH 698C	Thesis/Graduate Project	2-4			

Total Units Required \_\_\_\_\_ (Minimum 30 units)

Check Required:

\_\_\_\_\_ Comprehensive:      Passed \_\_\_\_\_ Failed \_\_\_\_\_  
 \_\_\_\_\_ Thesis/Project:      Approved \_\_\_\_\_

FOR GES USE ONLY

**SIGNATURES:**

Student: \_\_\_\_\_ Date: \_\_\_\_\_  
 Major Advisor \_\_\_\_\_ Date: \_\_\_\_\_  
 Graduate Coordinator \_\_\_\_\_ Date: \_\_\_\_\_  
 Approved by GES \_\_\_\_\_ Date: \_\_\_\_\_

GES	BY	DATE
Received		
Classified		
Notified		
Grad Check		
Degree		

White -- Graduate Studies  
 Yellow -- File Copy  
 Pink -- Student

Revised 04/25/2005

## **Field experience**

A fundamental part of our curriculum is the field experience (180 hours under EOH 693A). The EHAC graduate guidelines allow for this option, and this experience is required under our approval by the California Department of Health Services. Moreover, our program has a long tradition of emphasizing field experience.

The extended Southern California metropolitan area provides our department with one of the most diverse population centers in the world. As a consequence, field training experiences and internship opportunities are available in a number of varied settings.

- Local government agencies, academic institutions, and private industries are used as sites for internships and student projects.
- After a student has completed the core environmental health courses, they must sign up for internships. The philosophy behind this requirement is that the students have a basic background in order to get the most understanding out of their internship. Exceptions may be made when appropriate to the student and the internship.
- Students indicate preferences for the type of internship, the times for the internship, and the location of the internship site (see Student Data Form on next page). Every attempt is made to place the student in internships consistent with their preferences.
- Upon completion of the internship (minimum of 180 hours), students submit a summary of their internship.
- Preceptors are visited on a regular basis, both by phone interviews and site visits, for follow-up on internships.
- Preceptors are drawn from employers in the area, particularly from our alumni (preceptors are listed on pages 16-17, and recent internships are listed on page 18). In addition to the preceptors listed, we can draw from 58 different local agencies in California, with contact names and email addresses that can be accessed at [http://www.ccdeh.com/roster\\_2002.asp](http://www.ccdeh.com/roster_2002.asp). State agencies such as the California Department of Health Services and the California Environmental Protection Agency offer multiple opportunities, as do large local industries such as Boeing Corporation, Hughes Corporation, Texaco, and Chevron.

## **Internship Documentation Procedures**

1. Students fill out an internship request form, indicating preferences for internship, location, etc.
2. After placement, records are filed on a semester basis and stored in the department office.
3. Records include: student name, organization name and location, preceptor's name and phone number, and a brief description of the type of internship.
4. Records must account for every student enrolled in each internship class. Due to our obligations to preceptors, student internship papers will not be released for public review. However, they are available for review by the site visit team.

**Environmental and Occupational Health Program**  
**HSci 494B: Academic Internship**  
**HSci 693A: Supervised Field Training**

**Student Data Form**

*This form is to be completed by all EOH majors seeking credit for a field experience program.*

Student Name: \_\_\_\_\_

Phone Number(s): \_\_\_\_\_

Type of Internship Sought: \_\_\_\_\_

Geographical Area Sought: \_\_\_\_\_

Day(s) of Week Available: \_\_\_\_\_

Special Notes:

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**Internship Preceptors 2001-2006:**

<b>Internship sites</b>	<b>City</b>	<b>Preceptor</b>
3M Pharmaceuticals	Chatsworth, CA	Len Posner
Advanced Bionics Corporation		Jeanne Spivey
Amgen	Thousand Oaks, CA	Kim Monroe
Anhueser- Busch Inc.	Van Nuys, CA	Guy Stancil
Anheuser Busch Inc.	Van Nuys, CA	Chris Harden
Access Business Group, Nutrilite Products	Buena Park, CA	Craig Neyer
Antelope Valley Mosquito & Vestor Control	Antelope Valley	Karen S Mellor
BP Carson Refinery	Carson, CA	Heather White
BP Carson Refinery	Carson, CA	John Sullivan
BP Service Station	La Palma, CA	Scott Fife
Banner Pharmacaps	Chatsworth, CA	Zareh Abramian
The Boeing Co- Integrated Defense Systems	Huntington Beach, CA	Joseph Rudolf
Boeing Satellite Systems	Los Angeles, CA	Jimmy Shaw
California Institute of Technology	Pasadena, CA	Art Seiden
California Institute of Technology	Pasadena, CA	Larry Martinez
Chevron Refinery	L.A., CA	Mark Duda
City of Calabasas Public Works Department	Calabasas, CA	
City of Los Angeles, Bureau of Sanitation	Lake View Terrace	Binh Truong
County of LA, Dept. of Health Services	Baldwin Park, CA	Jonathan Fielding
City of L.A. Water & Natural Resources Div.	Los Angeles, CA	Gerald McGowen
City of Long Beach Hlth & Human Services	Long Beach, CA	Jeff Benedict
City of Vernon Health Dept.	Vernon, CA	Lewis Pozzebon
ConAgra Foods, Grocery Foods Group	Irvine, CA	Samuel Lai
Conservancy Of Southwest Florida	Naples, FL	Sharon Truluck
DWP LA	Sun Valley, CA	Rebecca Rosenfield
District safety Office U.S. Postal Service	Pasadena, CA	Cathey Sinai
Environmental Health	Los Angeles, CA	Veronica Bachman
Environmental Health	Los Angeles, CA	Lisa Frias
Environmental Health	Los Angeles, CA	G. Hirschtick
Environmental Health	Ventura County, CA	Debra Borsos
Environmental Health	Ventura County, CA	Elizabeth Huff
Environmental Health	Ventura County, CA	Randy Smith
Fadal Engineering	Chatsworth, CA	Jeanne Spivey
Food and Drug Administration		
Genencor International	Palo Alto, CA	Amy Boas
Greater L.A. Co. Vector Control District	Santa Fe Springs, CA	Mike Shaw
Haz. Waste Trans. Serv. Inc. (HTS)	Santa Fe Springs, CA	Kiirt Umphress
Hughes Research Lab	Malibu, CA	Susan Harmon
Hygiene Technologies International, Inc.	Chatsworth, CA	Paramveer Cheema
Interstate Brands Corp., Millbrook Division	Millbrook	Vianey Mendez
Institute for Tribal Environment Professionals	Flagstaff, AZ	Matthew Zierenberg



Jet Propulsion Lab	Malibu, CA	Susan Empy
Jet Propulsion Lab	Pasadena, CA	Terry Bednarczyk
Jet Propulsion Lab	Pasadena, CA	Henry Koyamatsu
L-3 Communications Corporation	Sylmar, CA	R. Resella
L.A Co. Dept of Health Services	Pasadena, CA	Shenry Koyamatsu
L.A Co. Dept of Health Services	Monterey Park, CA	Sam Bellomo
L.A Co. Dept of Health Services	Monterey Park, CA	Frank Gomez
L.A. Co, Env. Hlth	Monterey Park, CA	John Porter
L.A.U.S.D. Env. Hlth and Sfty	Baldwin PK, CA	G. Hirschtick
Lawrence Livermore National Library	Livermore, CA	Barry Goldman
Lockheed Martin Aeronautics Company	Palmdale, CA	Vick Kapur
Lockheed Martin Aeronautics Company	Palmdale, CA	Charles Patanasiri
Lockheed Martin Aeronautics Company	Palmdale, CA	Michael Haro
Mattel	El Segundo, CA	Tom Boxwell
Medtronic Minimed	Northridge, CA	Teri Jackson
NBC Universal	Universal City, CA	Alberto Camas
Northridge Medical Center	Camarillo, CA	Paul Hambrick
Northridge Medical Center	Northridge, CA	David Greenwood
Northridge Hospital Medical Center	Northridge, CA	Susan Shamban
Ormco-Glendora	Glendora, CA	Elisa Cortez
Port of Long Beach	Long Beach, CA	Robert Kanter
Providence Med Care	Northridge, CA	Susan Shamban
Pasadena Dpt of Public Health	Pasadena, CA	Mel Lim
The Phlymar Group, Inc	Pasadena, CA	Mark Katchen
Professional Outlook, Inc.	Holland, MI	Kristine Martin
Quest Intl.	Pasadena, CA	Mel Lim
R.R.Donnely & Son	Woodland Hills	Jan Deering
Raytheon	Carson, CA	Tom Hillis
Spitjerm California Gas Co.	Los Angeles, CA	Socorro Cottle
Thibiant International	Chatsworth, CA	Z Gbramian
Toyota Technical Center, USA, INC	Torrance, CA	Reggie Thompson
Transportation Foundation of Los Angeles	Los Angeles, CA	Kathy Corneille
U.S. Chemical Safety&Hazard Invest. Board	Washington, DC	John Lau
Unilab (Quest Intl.)	Los Angeles, CA	Marie Edson
Ventura County Fire Dept.	Ventura, CA	Sal Paredes
Ventura County E.H.D.	Ventura or Moorpark, CA	R. T. Smith

#### 4. Course requirements linked to accreditation competencies:

**Note:** Prerequisite courses were listed earlier in this section on curriculum, along with links to EHAC core competencies. This section focuses on core competencies for classified graduate students who have met the prerequisite core competencies.

##### Natural Sciences

EHAC Academic Guidelines	Course Designation	Course Name	Semester Credit Hours	% course time on EHAC guideline	Principal Instructor(s)
Biological Sciences	BIO 106/L BIO 107/L BIO 215 Or BIO 101 BIO 281, 282 EOH 455/L	Biological Principles I Biological Principles II Intro. Microbiology Or Introductory Biology Human Physiology, Lab Microbiological Hazards in Environmental Health		100%	Numerous
Chemistry	CHEM 103 CHEM 104 CHEM 235 Or CHEM 101/L CHEM 102/L CHEM 333 CHEM 334	Introductory Chemistry I Introductory Chemistry II Intro. Org. Chemistry Or General Chemistry I General Chemistry II Principles of Org. Chem. I Principles of Org. Chem. II		100%	Numerous
Physics	PHY 100A/L PHY 100B/L	General Physics I and Lab General Physics II and Lab		100%	Numerous
Math	MATH 105	Pre-Calculus		100%	Numerous

##### Communication Skills

Written communication	All students must pass the Upper Division Writing Proficiency Exam (UDWPE), a university-wide requirement.
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##### EOH Prerequisites

Epidemiology	HSCI 488	Epidemiology	3	100%	Madison, Rosenblatt
Statistical Methods	HSCI 390, L	Biostatistics, lab	3	100%	Madison, Rosenblatt, <b>Chu</b>
Toxicology	EOH 456	Industrial Toxicology	3	100%	Machado
Basic EH Science	EOH 356A	Environmental Health I	3	100%	Hatfield
	EOH 356B	Environmental Health II	3	100%	Hatfield

Environmental Economics, Management, Law & Policy	EOH 352	Environmental Health Policy, Law, and Administration	3	100%	Seiver
Risk Assessment	EOH 356B EOH 456	Environmental Health II Industrial Toxicology	3 3	30% 10%	Hatfield Machado
Risk Communication	EOH 356A EOH 456	Environmental Health I Industrial Toxicology	3 3	30% 30%	Hatfield Machado
Occupational Health & Safety	EOH 466A	Occupational Health	3	100%	Bellin

**Graduate Program (for classified graduate students):**

EHAC Core Competencies	Course Designation	Course Name	Semester Credit Hours	% course time	Principal Instructor(s)
Analytical skills	EOH 694	Research Design in the Health Sciences	4	100%	Madison
	EOH 696	Seminar: Research Methodology	3	100%	Madison
Communication skills	EOH 554	Seminar: EOH Problems	3	100%	Bellin, Machado
	EOH 555	Seminar: EOH Programs, Standards and Controls	3	50%	Bellin, Sullivan
	EOH 693A	Supervised Field Training	3	50%	Schillinger
Public Health Science knowledge and skills		This is in <u>addition</u> to the prerequisite courses.			
	EOH 693A	Supervised Field Training	3	50%	Schillinger
Policy development and program planning skills	EOH 553	Administration of Environmental Health Programs	3	50%	Sullivan
	EOH 555	Seminar: Environmental Health Programs, Standards and Controls	3	50%	“
Financial management and planning skills	EOH 553	Administration of Environmental Health Programs		50%	“

**Note:** 400 level electives, listed earlier in this section, are available to both graduate and undergraduate students, thus enhancing the integration of graduate and undergraduate programs. However, there is a requirement of separate and additional work for graduate students for the purpose of differentiation as mentioned in the EHAC criteria. While this work varies from course to course (as is appropriate), it typically calls for a writing assignment, which is consistent with the demands for greater technical writing and oral presentation skills within graduate programs.

## 5. Culminating Experiences

- **Options**

In compliance with EHAC guidelines, students must choose one of the following culminating experiences:

- **Comprehensive Examination** (written, plus optional oral component)  
As preparation, the student registers for EOH 697 Directed Comprehensive Studies (3 units that do not count toward the program total).

The comprehensive exam is divided into three parts:

- Part I includes communicable diseases, food safety, vector control, solid and hazardous wastes.
- Part II includes air quality, wastewater management, and radiation.
- Part III includes occupational health

To obtain more information about the comprehensive exam, please see page 21 of this report. In addition to our comprehensive exam, our graduate students are also required to write major papers (15-30 pages each) in three different graduate seminars (EOH 554, 555, and 696b).

- **Thesis** - After a proposal is approved, students register for EOH 698 Thesis (2-4 units; counts in program total). Steps towards the thesis are described in greater detail on page 22.

- **Recent modifications to the comprehensive exam.**

- We are introducing more expository writing into the comprehensive exams.
- We are refining the curriculum to include an even greater emphasis on food safety and water (alumni feedback continue to emphasize these areas).
- We are providing stronger advisement and review so that students can prepare more effectively for the comprehensive exam.

- **Papers in the last two years:**

In the spirit of documenting the substantial amount of writing from each of our students, we present the following list of papers from students in the last two years.

Public Health Effects at Hanford, Washington	Kathy Bulow-Cohen
Chemical Plants: The Next 9/11	Ivan Myers
Hybrid Electric Automobile Program	Nick Loebis
Acid Rain Training Program: Title IV of the Clean Air Act	Neil Mansky
Proposition 65: California's Unique Environmental Statute	Richard Brown
Healthy Schools Act of 2000	Alex Garcia
Electronic Waste	Elaine del Castillo
MTBE Regulation	Mili Patel
Norovirus and the Cruise Ship Industry	Cheryl Mullally
Perchlorates Unchallenged	Robert Wong
Botulism: are your foods safe to eat?	Karen Martinez
Occupational Noise Exposure	Sepi Heydari
Underground Storage Tanks	Jeff Bouck
Ergonomics	Andrew Kim
Molds and Indoor Air Quality	Naoyo Mori
Globally Harmonized System for Classification and Labeling of Chemicals	Alice Lee
The Hearing Conservation Amendment: A Historical Perspective	Matt Switzer
Electronic Waste	Obed Chavez
Federal and State Regulatory Program Processes to Reduce Ambient Air Pollution through Regulation of Automobile Emissions	Aaron Porter
Clean Air Mercury Rule 2005	Celeste Hammond
EPCRA (SARA Title III)	Kevin Stone
Pesticide Residue in Foodstuffs	Jody van Leuven
Sociopolitical Impacts of High Level Nuclear Waste Disposal	Patrick Yong Ho Chun
Food Irradiation	Nolan Christian
Controlling Work Related Musculoskeletal Disorders	Natasha Teston
Radionucleotides in Nuclear Medicine	Eric Davila Moriel
Stormwater Regulations in Los Angeles	Kislev Joy Ang
Ergonomics: An Analysis of Federal and State Standards	Len Posner
Beach Water Quality in the Los Angeles Area	Brian Hubinger
CFC Legislation to Protect the Stratospheric Ozone Layer	David LeDuff
A Closer look at Endocrine Disruptors	Jeanne Spivey
Cell phones and radiofrequency radiation	Suzanne Duvall Knorr
Dept. of Health Services Childhood Lead Poisoning Prevention Program in California	Tongsu Rivera

Environmental and Occupational Health (EOH)  
M.S. Degree Program

Comprehensive Exam (CE)

I. General EOH Section (taken first)

This section includes 170 multiple-choice questions, which comprehensively cover the major topics subsumed within the environmental and occupational health sciences. Questions will be drawn from the lectures, assigned texts and required readings in EOH 356A, 8 and EOH 466A and are contained in three separate exams.

II. Elective Section

This elective portion of the Comprehensive Exam covers 4 courses within the student's area of concentration. Students completing an industrial hygiene option will be examined in EOH 4668, 466C and 465 plus one of the industrial hygiene-related electives.

III. Oral Exam

An oral exam by EOH faculty may be utilized as a final evaluative procedure in the examination process. The oral exam is assigned at the discretion of EOH Program faculty.

Notes:

The comprehensive exam is normally taken at the conclusion of the formal program or after completion, i.e., at the end of the last semester in residence or during the first summer session.

All portions of the comprehensive exam may, if necessary, be repeated once.

Although students must register for EOH 697 Comprehensive Examination (3 units), these units do not count towards the required 30 unit minimum for an MS Degree.

## M.S. Degree Program

### Steps to an Approved Thesis

- I. Select thesis topic.
- II. Develop a thesis proposal.
  - A. Problem statement
  - B. Literature review
  - C. Hypothesis
  - D. Data acquisition
  - E. Design
  - F. Materials and methods
  - G. Statistical test
- III. Select thesis committee (chair plus two).
- IV. Discuss thesis topic with committee.
- V. Obtain committee approval of proposal using the Thesis/Graduate Project Planning Form.
- VI. Execute thesis proposal; i.e., set up the data acquisition system, collect necessary data, and perform the indicated analyses (periodic meetings with your committee are recommended).
- VII. Write thesis
  - A. In organizing the thesis, you should consult Campbell's "Form and Style" and CSUN's "Guidelines for Preparation Thesis and Graduate Projects."
  - B. The traditional chapter outline is generally as follows:
    1. Introduction
      - a. Includes problem statement, hypothesis, and limitations
    2. Literature Review
    3. Materials and Methods
    4. Results
    5. Discussion
    6. Summary and Conclusions
    7. Recommendations
- VIII. Carefully proof your first draft.
- IX. Make appointment with graduate evaluator to have thesis printing format reviewed and approved.
- X. Submit copies of first draft to committee members a minimum of four weeks before the end of the semester, and allow at least 2 weeks for their comments.
- XI. Make corrections and submit final copy for review and signatures.
- XII. Make final appointment with graduate evaluator to submit thesis for binding before final deadline.
- XIII. Complete items on Graduate Evaluation Thesis/Graduate Project Planning Form.

## F. Faculty

Professor	Degree	Rank	Assignment	Status
Bellin	Ph.D. 1989	Prof.	466A,466B,466C,697, 693A, 699	F
Hatfield	Dr.P.H. 1985	Prof.	356A,356B,469,553, 554,555	F
Machado	Ph.D. 2000	Asst. Prof.	353,456,457,458,459, 554	F
Schillinger	Ph.D. 1982	Prof.	132,455,455L, 554,555	F
Seiver	D.P.A. 1991	Prof.	352,353,453, 457,494b	F
Mueller	M.S. 1992	Lecturer	467	P
Harris	J.D. 1995	Lecturer	454	P
Boxwell	M.S. 1979	Lecturer	365	P
Harmon	M.S. 2000	Lecturer	465	P
Oillataguerre	M.S. 1999	Lecturer	457	P
Alvord	M.S. 1997	Lecturer	353	P
Sullivan	Ph.D. 1985	Lecturer	469,553,555,560	P
Kennedy	Ph.D. 2000	Lecturer	466b,466c,554,555	P

Members of other programs also have teaching assignments in the required EOH courses. Dr. Madison teaches biostatistics and epidemiology and has a master's and doctoral degree in Environmental Health.

### Teaching and Advisement Loads

University guidelines require a weighted teaching load of 15 units per semester. Three of these units are assigned to committee work and student advisement (which requires a minimum of 4 office hours per week). There are no guidelines for advisement loads (students per faculty member), which vary considerably among the academic programs. Each EOH program faculty member has an average advisement load of about 30 student majors (i.e., graduate and undergraduate students).



## **Evaluation of Faculty Performance**

Faculty are evaluated on a standardized “Wilson Form” (see next page) by all students in each class on an annual or semi-annual basis. The evaluation forms become part of the faculty member’s personnel file and are used in evaluation associated with retention, tenure, promotion, and post tenure review.

All non-tenured faculty receive peer evaluations annually. Tenured faculty are peer reviewed as part of a five year post-tenure review cycle.

There are countless situations where we enjoy the advantages of departmental status. For example, we can now design our own Wilson Forms. We also have the freedom to update our Wilson forms as needed.

## **Professional Activities**

Active participation in professional organizations is required for promotion and tenure. All faculty are encouraged to be continuously involved in professional organizations at state, local, and national levels. The vitas included in the appendix provide some documentation of the extensive professional activities within the EOH program. For example:

- Drs. Hatfield, Seiver, and Schillinger have been active the National Environmental Health Association, both at the national and regional levels;
- Dr. Bellin has been active in the American Industrial Hygiene Association, both at the national and regional levels; and
- Dr. Machado has been active in the Society of Teratology.

## **Faculty Development**

Faculty development on our campus is organized through CIELO (Center for Innovative & Engaged Learning Opportunities), formerly known as the CELT (Center for Excellence in Learning and Teaching). This center offers regular workshops on teaching. The University Technology Center provides an extensive set of computer program training workshops.

Monies are also available to support faculty participation in the academic programs of professional organizations. Extra support is provided to junior faculty to encourage scholarly activities such as presentations of research papers. We have also had success with online educational materials for faculty (as individuals and in groups).

## **“Wilson Form” for Student Evaluation of Teaching**

Students are asked to rate their instructors on a scale of 1-5, where:

- 5 is strongly agree,
- 3 is neutral, and
- 1 is strongly disagree.

Students indicate their agreement that the instructor:

- Is punctual and professional
- Emphasizes conceptual understanding
- Discusses recent developments in the field
- Is careful and precise in answering questions
- Is well prepared
- Encourages academic achievement
- His/her knowledge of the subject is extensive
- Stress important points in lectures or discussions
- Explains clearly
- Discusses career opportunities in the field
- The students responsibilities in this class are made clear by the instructor
- The lectures provide a good basis for understanding the course material
- The basis for determining student grades is clearly explained
- Relates to students as individuals
- The assignments are fair and related to the course objectives
- The course is well organized
- Is available during office hours
- Discusses practical applications of course material
- The examinations fairly reflect the course material

Data analyses provide mean scores for each class, each instructor (including all their classes), and the entire department, along with a distribution chart of responses for each question.

Each of our faculty are highly rated teachers, with average scores well above a 4 on a 5 point scale. Feedback from these surveys has influenced a number of key programmatic decisions, such as:

- Two part-time instructors have not been re-hired this year because of lower evaluations.
- Two of our highest rated faculty have been placed in general education courses to improve recruitment.
- While our lowest average is still very high (more than 4 out of a maximum 5), we will emphasize “Discusses career opportunities in the field” in the coming year.

## F. Administration

### Organizational Table of Institution

California State University, Northridge (CSUN) is part of the 23 campus California State University system. It is the only public university located in the San Fernando Valley (1.6 million residents) and is one of the largest higher education institutions in California with an enrollment of over 33,000 students as of Fall 2006. CSUN is accredited by the Western Association of Schools and Colleges (WASC). Within the State of California, CSUN is accredited by the State Board of Education. As of Fall 2005, there were about 3,300 faculty and staff at CSUN. Key university officials are:

- University President: Dr. Jolene Koester
- University Provost: Dr. Harry Hellenbrand
- Vice President of Undergraduate Studies: Dr. Cynthia Rawitch
- Vice President of Graduate Studies: Dr. Mack Johnson

The University is comprised of the following Colleges:

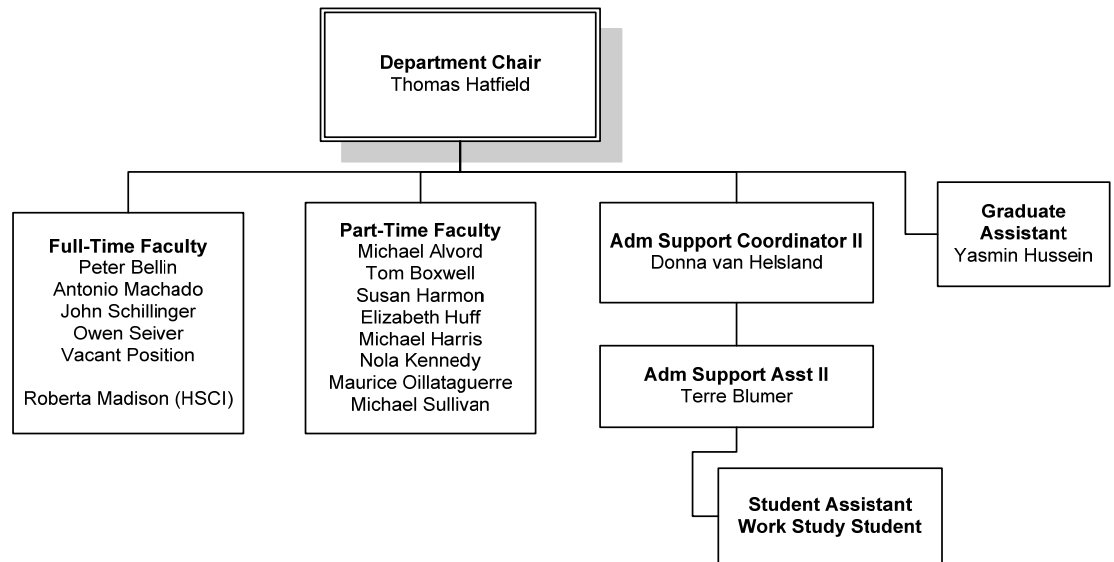
- Arts, Media, and Communication
- Business Administration and Economics
- Education
- Engineering and Computer Science
- Humanities
- Science and Mathematics
- Social and Behavioral Sciences
- **Health and Human Development** (our college)

Each of the colleges is run by a Dean. The Dean of the College of Health and Human Development is **Dr. Helen Castillo**. The College of Health and Human Development is comprised of the following departments:

- Child & Adolescent Development
- Communication Disorders and Sciences
- Family Environmental Sciences
- Kinesiology
- Leisure Studies & Recreation (recently renamed Recreation and Tourism Management)
- Health Sciences
- Physical Therapy
- **Environmental and Occupational Health**

This section has described the functional organizational structure in sequential order. However, more detailed organizational charts can be obtained at: <http://admnp1a.csun.edu/opweb/publishedcharts/csun.htm> . The next page shows the organization structure of the department.

# Department of Environmental and Occupational Health AY 2006 - 2007



## External Advisory Committee

Representatives from government and industry are contacted on a regular basis for feedback on program graduates and the appropriateness of their academic preparation. In addition, the program invites field practitioners every semester to give presentations to the Environmental and Occupational Health Students Association (EOHSA). Each speaker is encouraged to provide information on the academic preparation of EOH program majors. Visitations to field internship sites are also used to assess student preparation.

The Advisory Committee last met on May 25, 2006 on the campus of California State University, Northridge. The members of the Committee and their affiliations are listed below. The Committee has been active in the basic areas described in the EHAC criteria: 1) our meetings provide insightful discussion on curriculum, 2) some members have played an active role in our internships, 3) some members have provided funding or equipment to our program, and 4) two members of our Advisory Committee wrote letters of support for our departmental status that were critical in achieving this goal.

<b>Angelo J. Bellomo, MS</b>	Director, Office of Environmental Health & Safety; Los Angeles Unified School District
<b>Dean Elliott, MS</b>	Industrial Hygienist, Dept of Water & Power; City of Los Angeles
<b>Paul M. Grier, REHS, MS</b>	Department of Industrial Relations, Cal OSHA
<b>Steve Honjio, MS</b>	Department of Industrial Relations, Cal OSHA
<b>Elizabeth Huff, REHS, MS</b>	Community Services Manager; County of Ventura Environmental Health Division
<b>Mark Katchen, CIH, MS</b>	Managing Principal, The Phylmar Group, Inc.; Environmental Health & Safety Management
<b>Brett Koontz, REHS, MS</b>	Environmental Health Specialist City of Vernon Health & Environmental Control
<b>Bill Kupfer, MS</b>	Director, Environmental Health & Safety / Risk Mgmt; California State University, Channel Islands
<b>Sandra C. Landau, CIH, MS</b>	Environmental, Health, and Safety Manager - Technicolor, Inc.
<b>Jackie Luca, CIH, MS</b>	Director, Corporate Environmental, Health, & Safety; Northrop Grumman Corporation
<b>Tony Luca, CIH, MS</b>	Director, Safety, Health, and Environmental Affairs; Boeing Satellite Systems, Inc.
<b>Villia Simpkins, REHS</b>	County of Orange/Health Care Agency Environmental Health Division

### **Selection, retention, tenure, and promotion process.**

Selection of faculty is guided by “Guidelines for Selection of New Faculty,” a booklet published by the university. All program faculty are involved in the selection of new faculty.

Evaluation of teaching is actually a two-step process. First, faculty are evaluated on a standardized “Wilson Form” by all students in each class on an annual or semi-annual basis (form show in previous section). Second, the Personnel Committee reviews in-class faculty performance as part of the promotion and personnel procedures of the University.

These forms are reviewed by the Department Chair, are available to the Dean of the School, and become part of each instructor's personnel file. The Department Personnel Committee also evaluates tenured full professors every five years (post-tenure review). The evaluation forms become part of the faculty member's personnel file. All non-tenured faculty receive peer evaluations annually.

Faculty on tenure track are evaluated through the RTP process (retention, tenure, and promotion). The University's procedures for evaluation of faculty competence and performance are documented in the California State University, Northridge Administrative Manual, Section 600 - Academic Personnel Policies and Procedures. Sections 630 through 649 “Probation, Tenure and Promotion” delineate the step-by-step procedures that are to be followed.

To summarize that process, faculty are evaluated by a department personnel committee and the department chair. These evaluations are forwarded to the college personnel committee and the dean for further review and recommendation. Evaluations are then sent to the Provost of the university for final decision of retention, tenure, and promotion. Appeals may be filed with the PP&R committee (personnel planning and review), which is the university personnel committee. All personnel committees are comprised of faculty elected by their peers.

## G. Resources

### 1. Program Capacity

Program capacity is subject to a number of changes in the department, such as the pending hiring of a new fulltime tenure track faculty member. Also, as we design new courses and refine existing ones, new demands may be placed on our capacity. Nevertheless, with our current enrollments and the recent completion of new labs, we are well within our current program capacity, and look for aggressive growth over the next few years.

The primary funding for this university is through state funds, which has provided a relatively stable source of funding throughout our history. Resource allocation is a complex bureaucratic/political process in the California State University system. The allocation of financial resources begins as a political process in the state legislature and the governor's office as an item in the state budget. Funds are allocated by the state to the CSU system through the chancellor's office, which in turn allocates funds to each of the 23 CSU campuses. Each campus further allocates funds to its various academic schools or colleges, and the deans then allocate to departments. At the departmental level the final disbursement of funds is the ultimate responsibility of the Department Chair. [A record of our department funds is shown on the next page.](#)

Additional funding is reflected in these accounts:

- Donations to the EOH Program Trust Fund from industries such as Lockheed, Hughes, Northrop, and Aerojet General have provided additional support for teaching and research activities.
- State lottery funds are available each year for instructional equipment.
- Major funding for labs, referred to as “Group 2 funding.”
- MOU moneys (memorandum of understanding with the College of Extended Learning) is also available for our own departmental purposes.

	C S U State Accounts					Foundation	TOTALS
	GAD05	T496U Fund raising	T496U MOU (Ext Lrng)	Lottery L481U	Lab Accounts (GAD04)	Foundation Acct Fundraising A3485	Fund & Expense Balances
<b>Revenue:</b>	15,774.00	154.30	12,298.71	12,463.61	296.00	1,933.00	42,919.62
Contributions Revenue	0.00	0.00	0.00	0.00	0.00	1,200.00	1,200.00
Transfer-Group II/Prior yr carryover	11,983.10	0.00	0.00	394.56	0.00	0.00	12,377.66
Open University-Fall 05	0.00	0.00	3,885.00	0.00	0.00	0.00	3,885.00
Open University - 2 Years Alloc	0.00	0.00	18,704.00	0.00	0.00	0.00	0.00
Haz Waste Certificate	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lab Fees Fall 2005	186.00	0.00	0.00	0.00	0.00	0.00	0.00
Lab Fees Spring 06	110.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>TOTAL INCOME</b>	<b>28,053.10</b>	<b>154.30</b>	<b>34,887.71</b>	<b>12,858.17</b>	<b>296.00</b>	<b>3,133.00</b>	<b>79,382.28</b>
						1,212.50	Grad Asst
						338.05	Adv Board
<b>Expenses:</b>							
Special Pay	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Student Assistant	2,950.92	0.00	0.00	0.00	0.00	0.00	2,950.92
Workstudy Student (25% applied)	179.90	0.00	0.00	0.00	0.00	0.00	179.90
Supplies & Services	3,630.54	111.29	1,605.99	0.00	0.00	0.00	5,347.82
Classroom & lab materials	1,942.88	0.00	1,250.71	0.00	296.00	0.00	3,193.59
Books	74.82	0.00	(0.01)	0.00	0.00	0.00	74.81
Printing	2,056.75	0.00	14.06	0.00	0.00	0.00	2,070.81
Postage	50.70	0.00	0.00	0.00	0.00	0.00	50.70
Rental	0.00	0.00	515.66	0.00	0.00	0.00	515.66
Repairs & Maintenance	592.91	0.00	3,915.96	0.00	0.00	0.00	4,508.87
Membership/Accreditation	2,119.00	0.00	0.00	0.00	0.00	0.00	2,119.00
Conference Fees	450.00	0.00	0.00	0.00	0.00	0.00	450.00
Travel - In State	100.00	0.00	0.00	0.00	0.00	0.00	100.00
Travel -Out of State	1,150.00	0.00	0.00	0.00	0.00	0.00	1,150.00
Telephone Usage-Calling Costs	175.44	0.00	0.00	0.00	0.00	0.00	175.44
Moves. Adds, Changes	108.00	0.00	96.00	0.00	0.00	0.00	204.00
Telephone Voice Mail	288.00	0.00	0.00	0.00	0.00	0.00	288.00
Desk/Lap/Peripherals	0.00	0.00	849.68	0.00	0.00	0.00	849.68
Equipment <5K	11,983.12	0.00	284.00	0.00	0.00	0.00	12,267.12
Furniture	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Instr Equip<\$5K	0.00	0.00	405.94	12,858.18	0.00	0.00	13,264.11
<b>TOTAL EXPENSES</b>	<b>27,852.98</b>	<b>111.29</b>	<b>8,937.99</b>	<b>12,858.18</b>	<b>296.00</b>	<b>1,550.55</b>	<b>49,760.43</b>
<b>CURRENT BALANCE</b>	<b>200.12</b>	<b>43.01</b>	<b>25,949.72</b>	<b>(0.00)</b>	<b>0.00</b>	<b>1,582.45</b>	<b>29,621.85</b>



## 2. Physical facilities



The EOH Department is located in Jacaranda Hall at the northern portion of the main campus. The Department instructional facilities consist of classroom, laboratory, meeting room and office space. A variety of learning aid resources are available to faculty. A resource room is available for the entire department, and additional materials may be obtained from Media Services at Oviatt Library.

The Learning Resource Center (LRC) is dedicated to the academic and personal success of CSUN students. It is committed to high quality services responsive to its diverse student population and to its local, national and global communities. The LRC's primary objectives are:

- To facilitate students' adaptation to college academics.
- To stimulate students' interest in developing learning strategies conducive to success.
- To create an intellectually stimulating environment and build a community of learners.

Writing Center Consultants are graduate students enrolled in the Master's in English program. They can help students with academic, professional and personal writing: reports, research papers, business letters, resumes, etc., as well as help students develop effective strategies for time management, reading, note taking, and test taking. An appointment is necessary (818-677-2033)

### **Labs**

Four teaching laboratories have been set aside for exclusive use by the EOH Department: microbiology, housing, toxicology, and industrial hygiene. About \$300,000 worth of equipment for the sampling and analysis of chemical, physical, and biological agents has already been

provided. Monies for replacement and/or repair of lab equipment are provided annually. In addition, we anticipate substantial purchases of equipment and supplies for the new labs under funding referred to as “group 2 money” (in support of new labs). Also, instructional equipment funds are allocated each year within the college from lottery moneys provided by the state. The total anticipated value of all this equipment is anticipated to be roughly \$500,000 worth of equipment and supplies. Our existing equipment is listed below. Monies for replacement and/or repair of lab equipment are provided annually.

### **3. Equipment, Supplies, and Library**

Our existing equipment is listed below.

Microscopes, micrometers, sample slides, etc for light microscopy.  
mini-Ram Portable Aerosol Monitor (1)  
Marple Cascade Impactor (1)  
Selection of personal sampling pumps (SKC, Gilian)  
Baccharach TLV Sniffer (2)  
Photovac Microtip (1)  
Gas Sampling bags  
Filter media (cyclones, IOM selectors, cassettes, etc)  
Mercury Vapor Monitor (1)  
Gas Tech Model 1238 Monitor (2)  
Gas Tech Model 1341 Monitor (2)  
MSA Model 40 Combustible Gas Indicator (3)  
MSA Model 361 Multi Gas Meter (1)  
Metrosonics AQ 502 (1)  
Photovac QTRAK IAQ Monitor (1)  
Draeger and Sensonics Colorimetric Indicators. (Several)  
VICI Metronics Dynacalibrator Model 340-58-XD (1)  
Photovac Model 10S Portable Gas Chromatograph (1)  
Weston Illumination Meter  
Narda 8200 Series Microwave Survey Meters (2)  
Holaday Model HI 3002 Isotropic Broadband Field Strength Meter (1)  
Tecktronix J16 Illumination Meter (2)  
Blakray Ultraviolet radiation meter (1)  
Audiometers (2)  
DuPont MK3 and MK1 Audio Dosimeter (several)  
RION Model NA-23 Sound Level Meter (2)  
B&K Type 2209 Impulse Precision Sound Level Meter with Type 1613 Octave Filter Set (2)  
General Radio Type 1562-A Sound Level Calibrator  
WIBGET Monitors (2)  
Portacount 5000 QNFT (1)  
Selection of respirators  
Thermoanemometers: Alnor Compuflow, Alnor Thermo-anemometer. (5)  
Alnor Velometer (2)  
Alnor Junior (2)  
Alnor Balometer (1)  
Benchtop Aerosol Chamber (1)

More recently acquired equipment is listed below:

**1. Sound Measuring Equipment**

- General Radio 1565-B Sound Level Metering Set (6)
- B & K Precision Sound Level Meters w/ Octave Band Filters (4)
  - Type 2209 / 1616
  - Type 2204 / 1613
  - Type 2209 / 1613
  - Type 2203 / 1613
- B & K Type 4226 Calibrator
- Quest Type Model 2800 Meter with Model OB-300 1/3 octave filter set (1)
- Quest Q-200 Dosimeter (2)
- Ametek MK-1 Dosimeters (5)
- Ametek MK – 3 Dosimeters (5)
- Rion NA – 23 Sound Level Meter (2)
- Metrosonics db-3100 Sound Level Meter (1)

**2. Direct Reading Instruments**

- Bacharach Mercury Sniffer (1)
- Bacharach TLV Sniffer (3)
- TSI Q-Trak Indoor Air Quality Monitor (1)
- Quest aq-5001 pro Indoor Air Quality Monitor (!)
- Gastechtor Model 1314 (5)
- Gastechtor Model 1238 (5)
- Hnu PI 101 Dectector (3)
- Photovac P100 Microtip (1)
- Riken Kikei GX – 91 Multigas meter (1)
- RAE Systems Multi RAE Plus (1)
- Crown Triple Plus + (1)
- Enmet Smart Logger (1)
- PE Photovac Voyager portable gas chromatograph (1)
- NITON XL – 300 XRF Lead Analyzer with soil, surface, and air sampling kits (1)
- Biotest APC Plus Airborne Particle Counter
- MIE pdr-1200 Particle Counter
- Metrosonics aq-502 Indoor Air Quality Monitor
- OVA – 128 FID (3)

**3. Ventilation Related**

- Alnor Balometer (1)
- Kurz 541 Mass Flow Meter (2)
- Kurz 1041 Velometer (2)
- Alnor Model 3363 Thermo – Anenometer (3)
- Alnor Model 8565 Compuflow (2)
- Alnor Velometer Junior (2)
- Alnor Model RV Velometer (1)
- Dwyer Pitot Tubes (2)
- Kurz Model 441S Velometer (1)
- Ventilation System (Demonstration and Calibration)

#### **4. Air Sampling Pumps and Calibrators**

SKC Aircheck Pumps (5)  
Gilian HFS 513A Pumps (5)  
Sensidyne BDX 44 Pumps (2)  
Sipin Sp – 13 Pumps (4)  
Mini-Buck Calibroators (4)  
DC Lite Dry Cal calibrator (1)  
Wet Test Meters (3)  
Rotameters and burettes  
Cyclones, 10m separators, etc

#### **5. Nonionizing Radiation**

Sper Scientific Light meters (3)  
Holaday Model 1501 Microwave Survey Meter  
Holaday HI – 3603 VDT Survey Meter (1)  
Holaday HI – 3002 Broadband Survey Meter (1)  
International Light IL1400A Radiometer/Photometer with SEL240 sensor  
(ACGIH Actinic) (1)

#### **6. Miscellaneous**

Air-purifying respirators for demonstration of fit testing (20)  
North 800 series SCBAs (3)  
Scott Air Packs (2)  
Selection of protective clothing, gloves, hearing protection and goggles  
Benchtop Aerosol Test system (1)  
Benchtop Ductless Laboratory Hood (1)  
CAHN 26 Electrobalance (1)  
Denver Instrument Systems A200DS top loading balance (1)  
GST P4 2 GHz Desktop PC with Viewsonic 19 inch monitor (1)  
VICI Instruments Model 340 Dynacalibrator (1)

Finally, the most recent purchases are listed below:

Air Compressor  
Biological Safety Cabinet  
Burner-Natural Gas Model  
Carbon Monoxide Detective G120  
Colony Count/ w /Register  
Computers for Labs / Flatscreen  
Denver Instrument M-310 Analytical Balance  
Fiber Optic Scope  
Fisher Hamilton SafeAire Class II Safety Cabinets  
FisherBiotech Gel Drying System (w/vacuum & gel dryer)  
Genesys 2 Spectrophotometer Package  
Haake DC50-K35 Water Bath  
Humidity-Temperature Meter w/Nist Certificate  
Hydropro Telescopic Moisture Meter  
IEC Benchtop Centrifuge Kit

IEC Micromax RF Microcentrifuge  
Incubator  
Isotemp Econ Lab Oven  
Isotemp Safety Refrigerator/Freezer  
Large Gel Electrophoresis System  
Leica DC480 digital camera with video monitor  
Leica MZ16 High Tech Stereomicroscope  
Liquid Nitrogen Storage System: with Level Monitor  
Mammalian Cell Tissue Culture Kit  
Millipore Water purification system  
Napco 7000 Series Water-Jacketed CO<sub>2</sub> Incubator  
Specifications with dual chamber and TC sensor  
New Brunswick C24 Incubator Shaker  
Nikon Digital Color Camera System #97054  
PCR Machine (Thermal Cycler) + Block  
Plastic Carts  
Precision Model 265 Water Bath  
Protimeter Aquant Moisture Meter- M820  
Refrigerator/ Freezer  
Respirators  
Revco Ultima II SI Series Ultralow-Temperature Freezer  
Rollaway toolbox w/assorted tools  
Smart Lab Upgrades  
Stereomaster Zoom Microscope with Boom Stand  
trinocular w/ fiber-optic ring  
Teratological Chemicals Kit (Sigma/Marc)  
Thermo 20 Transfer Vessel  
Thermo E-C Apparatus Power Supply and Gel Kit  
Laparotomy Kit  
Davis Inotek Instruments/Concrete Moisture Meter  
SKC West/Flow Check Airflow Indicator w/ampoules  
United Industries/SCBA for Industrial Hygiene Lab

## Oviatt Library:



All library materials are housed in the Delmar T. Oviatt Library, a 234,712 square foot state-of-the-art facility. In 2006-2006 the library base budget was \$7,373,085. Of note are the Collaboratory with its 170 multipurpose computer workstations, 3 computer equipped library instruction labs, and 120 computer workstations devoted to library information resources. There are over 1,600 seats for in house study. During Fall and Spring semesters, the building is open 90 hours a week. The Library maintains its own server and web pages providing access to electronic information 24 hours a day.

The Oviatt Library has a physical collection containing 1.3 million volumes, of which over one million are books, and over 240,000 bound periodical volumes. The Library subscribes to 20,000 online journals, 2,100 print journals, 200 online databases and 11,000 e-books. The microform collection contains 3.1 million pieces. There are over 11,600 sound recordings, 9,200 film and video recordings and nearly 60,000 pictures and other graphic materials. The archives and manuscript collection exceeds 4,000 linear feet of materials.

The Library is heavily used with 8.2 million uses of its web pages annually, a gate count of 1.4 million annually, and over half a million interactions per year with Library personnel. (for more information, see: [http://library.csun.edu/About the Library/](http://library.csun.edu/About_the_Library/))

A high-density computerized storage retrieval system (the first of its kind in the United States) has been implemented and is online. A computerized catalog-circulation-serials-acquisition system has also been installed and is operational. Courses on electronic and internet access, and a variety of software programs are available at no cost to faculty. All faculty have personal computers in their offices with access to internet and Ethernet (used to access student files).

### 4. Support Staff

**Administrative Support Coordinator:** Donna van Helsland  
**Administrative Support Assistant:** Terre Blumer  
**Graduate Assistant:** Yasmin Hussein  
**2 Work Study Student Assistants:** New each year

## 5. Off campus resources

Our location in southern California affords us many opportunities located off campus that serve as additional resources. A few examples include:

- The California State University System is the largest university system in the nation. The CSU system is composed of 23 campuses and has 414,000 students supported by 44,000 faculty members and staff. As such, we have ongoing access to CSU grants, particularly for improving teaching across the CSU system
- About 20 miles from CSUN is the alma mater of several of our faculty – UCLA. We maintain ongoing contact and indeed recruit some of their faculty into our program. Dr. Machado is perhaps the best example of this connection, by having access to world class research facilities at UCLA well after he completed his doctoral degree there.
- The California Environmental Health Association has some active local chapters throughout the southland.
- Dr. Hatfield has taken advantage of the Fulbright program by teaching at the University of Kuopio. More than that, the availability of European Union (EU) funding has allowed him to travel to Finland and Estonia regularly for guest lectures over the past 12 years. Indeed, Dr. Hatfield was named an adjunct professor at the University of Kuopio and the University of Tampere.
- The Southern California American Industrial Hygiene Association has an active chapter in the southland that is dominated by CSUN graduates.
- We continually gain new insights for our department because of our accreditation by the American Board of Engineering and Technology (ABET), and by our official approval from the California Department of Health Services (which permits our students early entry into the Registered Environmental Health Specialists state exam).

## 6. Grants

- **AEHAP:** The Association of Environmental Health Academic Programs provided funding to Drs. Hatfield and Seiver for the recruitment of diversity students into environmental health.
- **Beck Grants:** Dr. Hatfield received funding for development of online teaching strategies. These teaching grants are available each year to CSUN faculty on a competitive basis.
- **CSUN Research and Sponsored Projects:** Dr. Hatfield received a mini-grant for research on risk communication. These grants are also available each year to CSUN faculty on a competitive basis.
- **California Faculty Fellows:** The state of California releases RFP's to the CSU each year on a variety of policy-related issues. Dr. Hatfield received an individual grant, and Drs. Seiver and Hatfield received a joint grant for research on risk management issues related to the California Environmental Quality Act.
- **MARC:** funding from the Minority Access to Research Careers (sponsored by the National Institute of General Medical Sciences) has been awarded to Dr. Machado to bring Biology students into his toxicology research lab. Aside from supporting his work in environmental teratology, it also helps recruit students into the major.

- **King Industries:** King Industries donated an air scrubber, and we are negotiating with several companies to install a containment area for the purposes of ongoing research in mold remediation and testing.
- **Pacoima Beautiful:** this grant is for the improvement of the community of Pacoima, located close to the CSUN campus. Funding to Dr. Schillinger has covered a variety of environmental health projects in water quality, air quality, vector control, and risk management.
- **Lockheed:** funding from Lockheed has helped fund a graduate assistant for the various lab activities in the department.

## 7. Anticipated Changes

Most of the major changes have already occurred in terms of:

- 1) refurbishing the labs,
- 2) gaining a new tenure track faculty position, and
- 3) obtaining a graduate assistant.

Much of the anticipated changes would be related to these three activities. We are extremely pleased with these new resources and expect various adjustments that will optimize our use of these resources.



## H. Students

### 1. Admission Requirements

Graduate students seeking admission must have a strong science background and a minimum GPA of 3.0, or GRE scores above the 50th percentile in one of the three basic areas.

Entry into classified status in the M.S. program requires completion of the minimum science core required for the B.S. degree and an applied core of general environmental health (6 units), occupational health (3 units), environmental health administration (3 units), biostatistics (3+1 units), and epidemiology (3 units). The 30 unit minimum in the formal M.S. degree program is taken upon the completion of these background courses.

### 2. Employment Status of Graduates in the Last 6 Years

<b>2000F</b>		
Ryan	Kinsella	DTSC
Kimberly	Monroe	Amgen
Kristin	Quinones	Computer Sciences Corp.
Chrystal	Richter	Unknown
Suzanne	Du Vall Knorr	Ventura County EH Div
Amber	Masci	Unknown
Milton	Molina	L.A. County EH Division
Kristi	Repp	Professional Outlook, Inc.
Kirandeep	Sagoo	L.A. County EH Division
Christopher	Shaw	Physical Therapist
Yared	Gebreyesus	Unknown
Paul	Grier	Cal-OSHA
<b>2001sp</b>		
Charlene	Ching	Jet Propulsion Laboratory
Edgardo	Delacruz	Nissan Corp.
Marc	Hendon	DTSC
Joyce	Lew	Aerospace Corp.
Norma	Martinez	Cal-OSHA
Mathias	Mekasha	L.A. Unified School District
Matthew	Roth	Ventura County Environmental Health Dept.
Lala	Shahoian	Unknown
Jeanne	Spivey	Advanced Bionics Corporation
Sheree	Torres	Boeing
Shahzad	Ghovanloonina	CA Department of Toxic Substances Control
Lori	Menke	Unknown
Cari	Monzelowsky	Unknown
Karyn	Wallace	Southern California Gas Company

<b>2001su</b>		
John	Castelli	L.A. County EH Division
Amelia	Derazario	Unknown
James	Riley	Unknown
Benjamin	Spivey	Advanced Bionics Corporation
Kenny	Tran	U.S. Navy
<b>2002F</b>		
John	Herbig	Law School
Alina	Hovakimian	Unknown
Brian	Hubinger	Anheuser Busch Inc.
Christina	Lewis	Unknown
David	Thompson	City of L.A.
Homero	Camacho	Doctoral Student
Alvaro	Camas	Jet Propulsion Lab
<b>2002sp</b>		
Christina	Bachmann	L.A. County EH Division
Constance	Brown	Boeing
Adrine	Ibranyan	Unknown
Vikram	Kapur	Lockheed Martin Aeronautics Company
Gevork	Kazanchyan	L.A. County Env. Health
Steven	Korenstein	Cal-EPA Dept of Toxic Substances Control
Naoko	Machida	Batelle
Leonard	Posner	3M Pharmaceuticals
Jane	Stover	Boeing
Michael	Szekely	L.A. County EH Division
Jody	Bancroft	Baxter BioScience
<b>2002su</b>		
George	Granger	Technicolor
Ivar	Sohn	Unknown
<b>2003F</b>		
Stacey	Christian	Unknown
Alexandra	Kowalczyk	ATC Associates
Mehdi	Sanwari	Unknown
Aaron	Porter	Unknown
<b>2003sp</b>		
Marinela	Arce	DTSC
Janet	Jacob	Consultant
Dennis	Madison	Forest Lawn
Nopawan	Vuthichayakorn	Lockheed Martin Aeronautics
Alexis	Williams	Unknown
Tongsu	Rivera	J. Silver Consulting
<b>2003su</b>		
Mark	Mandel	UCLA Health and Safety
<b>2004F</b>		
Marc	Benchimol	Unknown
Nolan	Christian	Unknown
Aryan	Kamali	Jet Propulsion Lab
Salvador	Leanos	Ventura County EH Div

Naoyo	Mori	Unknown
Natasha	Teston	Unknown
Kevin	Stone	Texaco
<b>2004sp</b>		
Vanessa	Aguilera	Unknown
Dora	Gosen	Unknown
Kristen	Owen	Hughes Research Lab
Rand	Rabadi	Ventura County EH Div
Aderineh	Saralou	Unknown
Christina	Simpson	Unknown
Jody	Van Leuven	Unknown
Akira	Yoshimura	City of Pasadena
Phillip	Feola	Law School
Andy	Kao	Unknown
<b>2005F</b>		
Celeste	Jones-Hamann	Unknown
Levon	Karamanukyan	Unknown
Farideh	Marzi	Lab supply company
Cheryl	Mullally	Princess Cruise Lines
Charles	Patanasiri	Lockheed Martin Aeronautics Company
Angelica	Torres	Walt Disney Co.
Sepideh	Heydari	Unknown
<b>2005sp</b>		
Erica	Blyther	L.A. Airport
Erik	Davila-Moriel	Medical School
Kathryn	Franssen	Unknown
Karine	Melikabramians	Amgen
Nahid	Motamedi	Lab supply company
Maurice	Oillataguerre	Glendale Public Works Dept.
Suzanne	Quist	Boeing
Stacey	Roberts	Valenica Water District
Mohsen	Mozayyan	Sanford Papermate
Gilda	Tavasoli	Unknown
<b>2005su</b>		
Paul	Tantet	Ventura County Watershed Protection District
<b>2006sp</b>		
Michael	Haro	Lockheed Martin Aeronautics Company
Joseph	Rudolf	The Boeing Co- Integrated Defense Systems
Angelica	Serrano	Walt Disney Co.

### 3. Current Graduate Enrollment and Trends

Our enrollments are reported below using two different measures: total number of students, and full-time equivalent students (FTES). FTES is the total number of student credit hours divided by 12 (12 units is the load of fulltime students). The FTES more accurately reflects the contribution of full-time and part-time students to total enrollments, and it also accounts for the substantial contributions from students outside our major that enroll in our general education courses.

	2001	2002	2003	2004	2005	2006
Total Numbers	62	53	52	43	42	40
FTES	23	35	33	30	28	28

**Current Graduate Level Enrollment: 40 (28 FTES)**

**Projected enrollments:** Graduate enrollments have been stable in the last three years. We look to bolster our enrollments in several ways:

- 1) We emphasize general education courses in environmental health (EOH 353 and 101), which have recruited students at the undergraduate level (see comments below in “Undergraduate program enrollments”).
- 2) We continue to survey our students to gain insights as to the most effective recruiting tools.
- 3) Our relatively new departmental status continues to increase our visibility within the university.

### 4. Number of Graduates in the past 6 years

Academic Year	B.S.	M.S.	Total
2000-2001	45	21	66
2001-2002	46	22	68
2002-2003	29	15	44
2003-2004	21	15	36
2004-2005	21	13	34
2005-2006	19	12	31

### 5. Undergraduate program enrollments

	2001	2002	2003	2004	2005	2006
Total Numbers	106	113	105	104	83	101
FTES	65	43	54	68	90	105

The FTES numbers demonstrate the dramatic growth in undergraduate enrollments over the last 5 years. These enrollments help support the graduate courses, because they are all part of the same department budget.

# I. Summary

## 1. Program Strengths

Teaching : The faculty have a fundamental interest in the quality of learning among our students. All of our faculty members are highly rated teachers who have an ongoing interest in the constant improvement of their teaching.

A common mission: there is a strong sense of a common mission within our program. We share a philosophy of preparing students for comprehensive field practice. Students are continually challenged to draw from basic and applied science courses and apply their knowledge and skills to innovative solutions to environmentally related problems.

Successful alumni: Our graduates have assumed leadership positions throughout government and industry. They are educated to manage EOH problems in an integrated and comprehensive way. Two of the first four recipients of the Distinguished Alumnus Award for the College of Health and Human Development were from the EOH program. By any fair measure of outcomes, our alumni are successful.

Departmental Status: Since our departmental status in 2002, it has been much easier to agree on department short term objectives, long range goals, and the allocation of scarce resources. The department is more easily administered and has achieved greater visibility within the college and university. This not only results in improved funding (e.g., equipment requests), but in the more strategic use of those funds.

## 2. Problem Areas

Enrollments: We experienced a drop in enrollments for over a decade. Fortunately, we are still one of the largest programs in the country and perhaps better able to survive such drops. While acknowledging that enrollment is a critical issue, we nevertheless have a long history of high student demand and are confident that we can recover from this national trend. Indeed, our enrollments appear to be growing again. Moreover, employment trends continue to indicate a tremendous need for our profession. A large alumni base (which comes from a history of high enrollments) and our location in a major metropolitan area provide a ready market for continuing education, fundraising, internships, and job placement.

Budgets : Like many universities across the nation, we have contended with severely reduced budgets. While this has been an issue in the past, there are reasons for optimism. For example, there is college and university support as demonstrated in at least four critical ways. First, budgets increased this year. Second, increased enrollments throughout the College of Health and Human Development have strengthened the college's relative position within the university, and proportionately more dollars have been allocated to the college. Indeed, the

EOH Department received funding for a new tenure track faculty position. Third, we have received dramatically increased funding for lab equipment from the so-called “Group II” monies. Finally, increased total enrollments within the Department have strengthened our funding.

Administrative expertise: With Dennis Kelly’s retirement, we lost over 30 years of administrative experience in the department. However, we planned for this transition, and it should be emphasized that four of our program faculty members (Bellin, Hatfield, Schillinger, and Seiver) have served as program director at different times. Furthermore, Dr. Bellin completed a 3 year term as chair, and serves as valued advisor on a wide range of administrative issues. In order to take full advantage of the broad spectrum of administrative expertise, the following strategies have been pursued:

- Rotating the position of chair among the senior faculty. The chair is reviewed every 3 years, and it is our expectation to rotate the position every 3 to 6 years.
- Sharing some of the administrative responsibilities of the chair across the department’s upper level faculty, and
- Participating in the numerous university forums that advance the skills of Department Chairs.

Research at a teaching institution : The central mission of our university is teaching, in contrast with R-1 institutions (i.e., comprehensive research universities). At CSUN, there is increased emphasis on teaching, advisement, and administrative duties, while there is relatively less emphasis on faculty research (although still quite significant). In this context, we view our increased publishing levels in recent years as a program strength -- we have learned the value of strategically managed collaborative research.

Our professors have been substantially more productive than ever, particularly in the area of applied and policy research. For example, our team research in areas such as food safety and indoor air quality has resulted in multiple publications for each of these areas. We believe this is a demonstrated excellence for an institution whose primary mission is teaching. We are especially pleased that this seems to have translated to a stronger position within the university (i.e., the transition to departmental status and the refurbished labs).

### **3. Long-term Plans**

We will remain committed to excellence in teaching and learning, to science-based training of environmental health practitioners, and to a passionate belief that environmental and occupational health professionals must prepare for managing the broadest range of physical, chemical and biological risks. More specifically, we have the following long-term goals:

- We hope to double our enrollments to help meet the tremendous need for environmental health professionals in our region. Such growth will bring with it the opportunity to expand the curriculum.
- With 4 of the 5 tenure track faculty in their 50's, we must plan on a ten-year transition from the current faculty to the faculty of the future. We have begun that process with the scheduled hiring of a new tenure track faculty member this year.
- We will continue to expand the activities of our labs, befitting the generous allocations we have received through “group II” funding at our university.
- We will continue to monitor the performance of our graduates as evidence for the need to modify our curriculum. This will be achieved through expanding our outcomes assessment process both here on campus and in the various professional settings where are students are placed and hired.

**B. Official Signatures**

Thomas H. Hatfield

12-11-06

Thomas H. Hatfield, Dr.P.H., R.E.H.S.  
Chair, Department of Environmental and Occupational Health

Date

Helen M. Castillo

12/13/06

Helen Castillo, Ph.D., R.N.  
Dean, College of Health and Human Development

Date