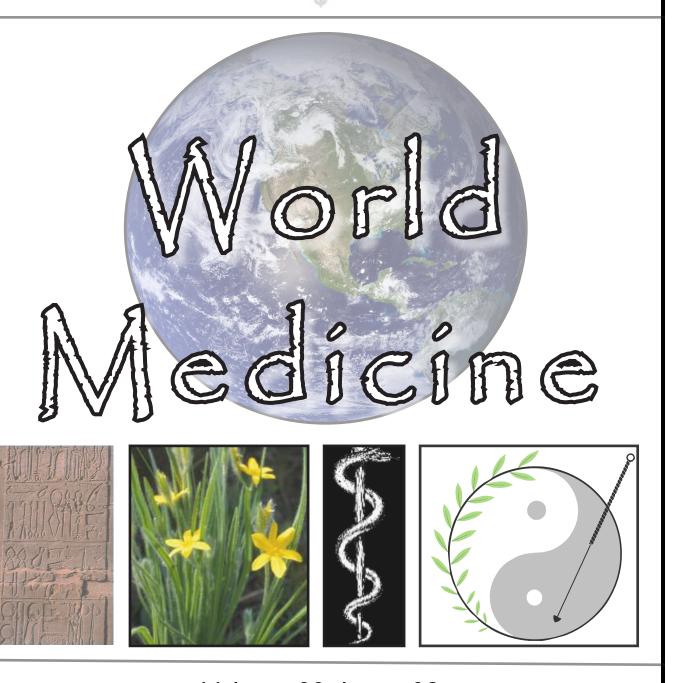
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EDITOR'S NOTE

In the present day, medicine is expanding and growing much faster than ever before. While there is much to expect in the future of health care, it is also important to delve into the past and understand how medicine became what it is today. The art of healing that began in many parts of the world have, in big or small, contributed to the medicine that physicians practice today in the United States. While the Greeks were most known for developing the more modern form of medical practice, bringing forth the Hippocratic oath, they did not come this far on their own. Many earlier forms of medical philosophy, derived from African, Chinese, and Egyptian medicine, have played an important role in the growth of medical practice around the world. Next time you witness an injury at a football game, think about how medicine has evolved to bring healthcare onto the playing field.

Thanks for reading Premed Perspective and Go Bears,

Sarah Pan Editor-in-Chief



ABOUT THE NEW SLETTER

Each month, our newsletter covers a themed topic and includes feature articles related to this theme that may be relevant and of interest to the pre-med community here at Berkeley. Every month the newsletter includes interviews with important figures in healthcare, as well as graduate/medical school information and local volunteering highlights. Working in conjunction with various pre-medical organizations, we seek to educate the community on events held by these organizations for the betterment of the entire pre-med population.

The PreMed Perspective is not an official publication of the Associated Students of the University of California (ASUC). The views expressed herein are the views of the writers and not necessarily the views of the ASUC nor the views of the University of California, Berkeley.

IN THIS ISSUE

Taking the Hippocratic Oath

In today's medical practice, all physicians are required to take medical histories of their patients. While such a detail may seem trivial, this tradition has its roots back in ancient Greece.



Egyptian Medicine

Medical practices of ancient Egypt are regarded highly for its contribution in current practices.

Traditional African Medicine

Traditional African medicine has been a controversial topic and now that there is technology to test the effectiveness of it, it has been a topic of hot debate.

Medical School Profile 04



USC: Keck School of medicine is evaluated in this week's installment of Medical School Profiles.

05 Chinese Medicine

Chinese medicine is a medical approach that is defended strongly by some, and attacked strongly by others. For those of you interested, here is a brief entry into the state of traditional Chinese medicine.



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Worried about taking organic chemistry at Cal? This article will give you some heads-up on what to expect.



MEDICAL 5 C H O O L P R O F I I F

USC - KECK SCHOOL OF MEDICINE

BY: YOUNGWON YOUN



http://www.usc.edu/schools/medicine/school/about/index.html

JUST THE FACTS

Type of School: Private School Uses AMCAS? Yes Average GPA 3.62 Average total MCAT 32 Average Class size 162 In- State Acceptance Rate 1 in 29 Out-of-State Acceptance Rate 1 in 61 In-State Tuition \$40766 Out-of-State Tuition same Total Applications (2001) 4,407 Interviewed

451

HISTORY

Keck was first established in 1885 and was the region's first medical school. Today, the Keck School of Medicine ranks among the nation's top 25 percent of medical schools in federally sponsored research (Association of American Medical Colleges, 2003). Keck School departments have risen to national prominence with ophthalmology, pediatrics and preventive medicine consistently ranked among the top ten in the country.

STUDENT LIFE

Located in Los Angeles, students have access to one of the most lively and popular cities in the nation. They also join the Trojan family and can be a part of the strong school spirit that USC is proud of. In addition, students have access to organizations and recreational sports on campus, as well has religious communities.

ADMISSIONS REQUIREMENTS

The Keck School of Medicine requires a year of General Biology, a year of General Chemistry, one semester of Organic Chemistry, and a year of Physics. The classes just listed must all be taken with their corresponding lab courses. The school also requires a semester of Biochemistry, one course in Molecular Biology, and 30 semester hours in the Social Sciences, Humanities, and English Composition studies. The Molecular Biology requirement can be met by the following courses: molecular genetics, cell and molecular biology, advanced cell biology, advanced cell biology, or and equivalent. In addition to these courses, classes in College Math/Calculus and Computing are recommended though not required. Also required are letters of recommendation, MCAT scores, and an interview (if you get one).

CURRICULUM

The themes of the Medical School are delivered in two different formats: the traditional Introduction to Clinical Medicine program (ICM), and also the Practice Profile Project (PPP). The ICM program helps students build their doctor-patient relationship, professional, and clinical growth such as history taking, interviewing, and physical examination. The Practice Profile Project is a new approach that was created to mold students into the expert communicators and problem-solvers. This program is case-centered and allows students to work in small group learning sessions as well as mentor groups. The first and second years will focus on core principles of health and disease, anatomy, introduction to clinical medicine and the patient (ICM), organ systems, and case studies. The third and fourth year focuses more on clerkship rotations in areas such as family medicine, neurology, gynecology, and pediatrics. The curriculum also integrates their HEAL program, Humanities, Economics, Art and the Law, which encourages their students to become more well-rounded.

China, medicine, and modernization

A brief look at the state of Traditional Chinese Medicine (TCM)

BY: ERIC TRIEU

Modern medicine has the reputation of being a discipline that is somehow immune to personal and cultural biases, especially as medical research continues to be refined and statistical data continues to grow. However, when it comes to the Chinese government, it seems that there is a slight Oriental slant towards the research that they have decided to fund.

One of China's more recent endeavors, the "Herbalome", is an ambitious project that will screen through roughly 400,000 herbal preparations to determine which of these "constituents of herbal preparations used as medications for centuries in China" contain molecules or sets of molecules that serve some medicinal purpose. Think Human Genome Project, except with Chinese herbs. The rationale behind this endeavor, which is expected to take over 15 years and cost dozens of millions of dollars, is essentially that there is a very high chance that something useful will come out of this project, especially considering the fact that China has been using these herbs to cure medical conditions for several millennia.

Underlying this recent push to unearth the secrets of Chinese herbal preparations, however, has been a more general push by the Chinese government to modernize traditional Chinese medicine. Those of you who watched the Olympics may have interpreted the amazing shows and breathtaking performances as China's assertion that it is very much a part of a westernized world which has for so long dominated global economics and perpetuated Western trends. By the same token, China has been pressing (and funding) its researchers to study the physiological and curative effects of what has been called Traditional Chinese Medicine (TCM), which includes herbal



For many Chinese, herbs are their only viable source for medicinal cures.

treatments, acupuncture, and tai chi. To a large extent, this initiative is fueled by cultural pride. As the director of the Institute of Agrobiotechnology at Academia Sinica in Taipei states, "This is our culture! We should be interested in making good use of it."

Is cultural pride a justifiable reason to spend millions of dollars on research? Many would disagree. One Chinese scientist has stated, "TCM is not based on science, but on mysticism, magic, and anecdote." Furthermore, the general consensus by American physicians and researchers is that there is not enough experimental evidence (specifically double blinded, placebo-controlled tests) that shows that acupuncture and other TCM-related approaches to medicine are worth pursuing. Despite this, TCM research in China continues.

There have been some metaphorical bursts of light in the TCM field. At least one Chinese herb has been found to contain important medicinal properties: artemisinin was isolated from one Chinese herb, and has been found to kill "chloroquine-resistant strains of Plasmodium, the parasite that causes malaria."

So where does this leave us? As many of us are aspiring doctors, to what extent should we trust TCM and what it has to offer? I personally think that it's a given that there is something to Chinese medicine that we don't quite understand yet; 4000 years of history is nothing to be trifled with. Maybe the Herbalome will be able to find something.

¹Stone. Richard. Lifting the Veil on Chinese Medicine. Science. 319 (2008): 709-710. ²Normile, Dennis. The New Face of Traditional Chinese Medicine. Science. 299(2003): 188-190.

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A look into the ancient Greek Medical philosophy that shaped much of modern Western medicine

"I will apply dietetic measures for the benefit of

the sick according to my ability and judgment; I

will keep them from harm and injustice."

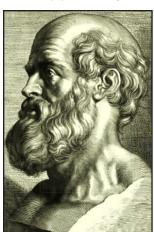
↑ t a white coat ceremony, you will most likely witness Amedical students take the Hippocratic oath, where they vow to uphold the moral practice in medicine for the benefit of humanity. Just like any other tradition, there is a story behind the Hippocratic oath. It all begins with ancient Greek medicine, where its medical philosophy eventually becomes the precursor for modern medicine.

Like the medicine practiced today in the United States, Greek medicine did not exist on its own. In fact, many cultures including the Indians, Egyptians, Mesopotamians, Cretans, and the Phoenicians, contributed to the development of Greek medical philosophy.

One of the earlier Greek physicians living in 475 BC, Asclepias, whose staff and holy snake is still widely recognized as the symbol of modern medical profession, was known to have invited his patients to sleep in his temple and be treated via "incubation". In this eccentric healing process, the patients would wait for God to prescribe medications in the midst of their dreams. While Asclepias relied on the supernatural powers to heal his patients, other Greek physicians turned towards science.

An important Greek philosopher from the mid-5th century B.C., Empedocles, brought forth important theories on the humors that eventually served as the foundation for

medical practice in medieval Europe. His four fundamental elements (earth, water, air, & fire), and four fundamental qualities (hot, dry, wet, & cold), were integrated into the Corpus Hippocraticum to establish the four constituent humors of the body (blood, phlegm, black bile, & yellow bile). This



http://www.uab.edu/reynolds/IMAGES/ Hippocrates.ipg

four-humor physiology was used widely in ancient Greek medicine to study the climatic and weather influences on the human body, leading to the holistic approach in treating the patient, rather than the disease itself.

Perhaps the most widely recognized as the Father of medicine and author of Hippocratic Oath was none other

BY: SARAH PAN

than Hippocrates, born in 460 B.C. on the Greek Island Kos. His contributions to Greek medicine range from descriptions of Hippocratic fingers (clubbing of the fingers: Eisenmenger's syndrome) to becoming the first documented chest surgeon. Being credited with the Corpus Hippocraticum, which consists of about seventy books on medical practice, Hippocrates remains the most pronounced and influential figure in all of Greek Medicine. Rather than support the traditional belief that disease was a punishment from the gods, he takes a different approach and suggests that disease is created by a combination of diet, living habits and the environment. This revolutionary theory for treatment led to the practice of Hippocratic medicine, which was eventually accepted by the Romans and throughout the Mediterranean region.

One important idea behind Greek (Hippocratic) medicine resides in the balance between the body humors and the environment. Harmony between the two, or eucrasia, is what maintains

> good health. On the other hand, diseases were thought to occur only as a result of the imbalance between body humors and the environment, otherwise known as dyscrasia, meaning "bad mixture".

While much of Greek medicine relied heavily on diet as the natural healing process, herbs were given if diet alone was inadequate in its assistance with healing. In fact, Hippocratic medicine is rather passive and relies on "physis", where the physician assists nature in the healing process rather than direct the healing. Surgery was considered as a last resort, even though it was actually well developed with the practice of skull trepanations and draining of empyemas due to the frequent bloody battles that were fought.

Hippocratic medicine was also known for its strict professionalism, requiring each Hippocratic physician to document all observations and medicinal procedures in a clear and objective form so that successors may refer to them in future practice. With reverence to Hippocrates and the established strict professionalism in medicine, many medical schools require their students to take the Hippocratic

Oath prior to practicing medicine.

Professor Carlson. IB 117 Medical Ethnobotany. http://en.wikipedia.org/wiki/Hippocrates

http://en.wikipedia.org/wiki/Hippocratic_Oath

http://www.mnsu.edu/emuseum/prehistory/aegean/culture/greekmedicine.html http://www.med-help.net/med-ancient-greek-medicine.html

AFRICAN MEDICINE: A PHARMACEUTICAL GOLD MINE OR HOLISTIC NONSENSE?

Throughout history, the Greeks are known for the founding of medicine and their advances in the discovery of many diseases. Many medical terms use Greek words; however, Greek medicine is known to have taken many ideas about the working of the body from the Africans, especially the Egyptians who discovered many correct notions from practicing mummification. Traditional African medicine has been played down for centuries due to its relationship with mysticism and divinity.

Traditional African medicine varies drastically with geography. Even in the same area, different tribes will have very different medical

techniques. Yet, there are some basic canons by which all traditional African medicines abide. In traditional African medicine, the belief is held and strongly advocated that many serious illnesses are caused by supernatural entities. In African culture, it is believed that the spirits of ancestors protect the lives of their descendants on Earth. In return, descendants must adhere to strict moral laws, set down by the ancestors, as well as pay their respects. Thus, serious illnesses arise when descendants step out of the ancestor's moral boundaries or anger them in some way. The term "ancestor spirit anger" has been used to describe this local belief. Divination, the technique of consulting the oracle, is used to supposedly cure ancestor spirit anger by identifying the hidden sin that has angered the ancestors and assign repentance actions to the patient to quail the ancestral anger. Traditional African doctors recognized the profound effects that the mind has on the body's ability to fight disease and stay healthy. Thus, psychoanalysis is often used in these divinations to bring out scaring memories or events that are straining the patients' consciousness. By talking it out and performing a simple task that simulates the act of repentance, the patient becomes more at ease and psychosomatic symptoms decrease. In addition to curing the mind's problems with spiritual help, traditional African doctors cure the body's problems with herbal remedies.

Herbal remedies are used throughout Africa to treat illnesses as minor as a fever to something as problematic as tuberculosis. Due to the fact that traditional African medicine has been passed down for so many years, poisonous herbs have been weeded out through trial and error. Thus, all African herbal remedies are not poisonous. However, modern



http://www.prometra.org/images/TraditionalMedicineLogo.jpg

BY: KEVIN J. LI

medicine has taken advantage of the thorough indigenous knowledge of these poisonous plants. Esere beans, known to be toxic at high doses, were used to isolate several anticholinesterases, which are used to clear out debris from the gastrointestinal track. Moreover, herbal medicines used to treat minor ailments have been extremely popular in other parts of the world, advertising as all-natural cures. Thus, many foreigners have identified the vast knowledge of the local African

doctors and have used that as a springboard to clinically test many of the local remedies on their effectiveness. Thereafter, many modern drugs have hit the pharmaceutical scene from the repacking of traditional African remedies. For example, a South African plant, namely hootia, has been turned into a weight-loss medicine for the masses. Hootia has been used for centuries to suppress the appetite of the bushmen while hunting. Umcklaobo, a common South African remedy, is currently being used as a respiratory medicine in Germany.

Due to these new uses of African remedies, there has been a new surge of interest in traditional African medicine. Laboratories around the world are now testing ancient remedies for their effectiveness and other abilities. However, not all the attention to traditional African medicine is positive. Many environmentalists have been protesting against traditional African medicine because the extensive use of certain plants for medicines have put many of the plants in danger of extinction. Pharmaceutical researchers see African medicinal herb knowledge as a gold mine for new medicine. Thus despite traditional African medicine's focus on holistic or psychosomatic symptoms, the knowledge of herbs and their medicinal uses has made it the center of alternative medicine in the modern age.

Sources

Okpako, David. "African Medicine: Traditions and Beliefs". Pharmaceutical Journal, Vol 276 (2006). 239-240. http://www.pharmj.com/pdf/articles/pj_20060225_traditional02.pdf

Elliot, Jane. "What Does Medicine Owe Africa?". BBC News Oct. 17, 2008. Accessed Oct. 26, 2008. http://news.bbc.co.uk/2/hi/health/7673150.stm

Helwig, David. "Traditional African Medicine". Encyclopedia of Alternative Medicine. http://findarticles.com/p/articles/mi q2603/is 0007/ai 2603000708

ANCIENT MEDICINE FROM AN ANCIENT CIVILIZATION

Egypt is known for its soaring pyramids as well as for the myriad of technological advances that it discovered thousands of years ago. One of its lesser known contributions is in the field of medicine. Their advanced methods of medicine have become integrated in today's practices.

Ancient Egypt, home to the towering Great Pyramids, is famous for its achievements in the fields of architecture and complex mathematics. However, it cannot be ignored that the ancient civilization also made important contributions to modern medicine.

Ancient Egypt was a breeding ground for a diverse set of diseases that ranged from the common cold to cancerous tumors. To combat against these diseases, the Egyptians developed an array of medical practices.

The basis of the civilization's practices was upon the balance of herbal medicine and religious beliefs. Egyptian priest physicians, known as wab sxmt (wab sekhmet), diagnosed illnesses by prescribing herbal remedies and spells that the patient would recite while taking the medicine.

Some of the herbs that these physicians recommended included opium, cannabis, myrrh, frankincense, fennel, cassia, senna, thyme, henna, and juniper. The most prominent of these herbal plants were garlic and onions, which were believed to boost endurance as well as mitigate the effects of asthma and bronchial-pulmonary illnesses.

Substances such as cannabis, in the form of hashish, were used to relieve pain for patients with terminal illnesses. Though the ancient Egyptians did not understand the chemical processes that took place in their medicine, they were able to appreciate the medicinal properties of herbs, likely



Egyptian priest physicians, known as wab sxmt (wab sekhmet), diagnosed illnesses by prescribing herbal remedies and spells that the patient would recite while taking the medicine.

White Magic. Photograph. http://flickr.com>.

BY: AKSHAY NATHAWAT



Garlic was the basis of Egyptian medicine, and it was believed that it boosted endurance.

http://www.ancient-egypt-online.com

through empirical observation.

The most prominent contribution that ancient Egypt made to medicine was in surgery. The civilization used obsidian knives and other sharp rocks to make precise cuts. These surgeries included circumcision, amputation, and even brain surgery in the form of trepanation (drilling a hole into the skull to treat intracranial diseases). When the civilization was introduced to metal, they began heating these instruments and using them for their practices.

The Egyptians were one of the first to understand that these heated instruments stopped bleeding and sealed cut blood vessels. The precision that these physicians used to perform the surgeries have been duplicated in today's practices.

Although ancient Egyptian doctors may not have had a clear understanding of the biochemical mechanisms involved in the herbs and techniques that they administered, they were nevertheless able to deal with an impressive range of diseases and health problems. Appropriate consideration must be given to the Egyptians when considering the cultures from which Western medicine has borrowed.

Sources

Breasted, J. H. The Edwin Smith Surgical Papyrus. N.p.: University of Chicago Press: University of Chicago, 1930.

Bryan, P. W. The Papyrus Ebers. N.p.: Geoffrey Bles: London, 1930.

Nunn, J. F. Ancient Egyptian Medicine. N.p.: University of Oklahoma Press: Norman, 1996.

Reshafim, Kibbutz. "Ancient Egyptian Medicine ." Pharaonic Egypt. Oct. 2008. 26 Oct. 2008 http://nefertiti.iwebland.com/index.html.

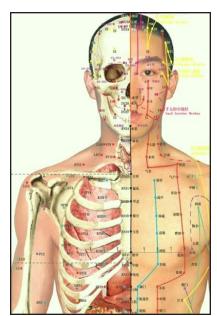
PRACTICAL POKING FOR PAIN AND TROUBLES

The Controversy of Modern Day Acupuncture Treatments

BY: ANDREW TRAN

Take a moment and engage yourself in a thought experiment with me. Tell me this: When you think of medicine, what do you envision? Do you see its roots? Do you see its progress? But most importantly, do you see how it affects you as a human being? I doubt that a picture of a billion needles being jammed into your body was what you were thinking of. In fact, you probably thought of something like a fancy white robe, a team of surgeons, an ICU, a prescription bottle of medicine, or maybe, if you read my last article from last month, a doobie. For medical use, of course. But what's the deal with acupuncture? Well, to summarize it in a few short words: It's big. And as probably most of you know, it's been big for a long long time.

It all started with the Chinese as far back, archeologists predict, as the 1st millennium BCE. The Chinese believed that it was stimulation of certain acupuncture points that lie along the meridians of an individual's vital energy. Although there is no medical or physiological basis for these suspicions, the art of acupuncture has continued into today and is still practiced readily all around the world. Although widely criticized due to its lack of anatomical feasibility, acupuncture treatments persist for a variety of ailments, including anorexia, constipation and diarrhea, carpel tunnel syndrome, sleep disorders, and post-traumatic stress disorder. An example that shows the



http://www.orienthall.co.uk/images/acupuncture%20point%20 wall%20chart%201.jpg

difference between the treatments in Western medicine and acupuncture is in the treatment of vascular headaches.

For those of you who aren't familiar with this news, vascular headaches are headaches that are usually accompanied by a throbbing in the temples and head area, and can be caused by a variety of reasons (such as high levels of stress). Western medicine suggests treatment with analgesics (any drug that relieves pain)

such as aspirin or ibuprofen to dilate the blood vessels in the scalp that are causing the throbbing pain, reducing the throbbing and thus the headache. Acupuncture however, calls for treatment of such a headache in the patient's palms, specifically in the web between the thumb and palm of then hand. Most patients that receive the acupuncture treatment report a pleasurable "tingling" sensation and a feeling of relaxation while the needles are in place, but side effects such as nausea and extreme sensitivity in the pierced palm point have also been reported. In all but some cases, relief of the headache was observed. Like Western medicine, this treatment had both successes and side effects. But most importantly, with no apparent medical cause, it worked.

Some of the theories in neuroscience that developed independent of acupuncture, such as the Gate-control theory of pain, suggest that pain is not only a stimulation of pain fibers but also an interplay of allowance and inhibition of pain pathways- in other words, pain can be altered or "gated off" by physiological, pharmacological, and even psychological ways. This theory predicts that acupuncture is simply a mechanism controlling the actions of the brainstem and inhibiting pain fiber stimulation.

Again, these are all theories that predict pain control, not ones that support the feasibility of acupuncture. But many have expressed their high opinions of acupuncture, marking its superiority in curing or reducing painful ailments where Western medicine had previously failed. According to a study by Holistic Nursing Practice, acupuncture directed at menopausal-specific sites can substantially alleviate hot flashes and sleep disturbances. With no physiological evidence, support for acupuncture comes not from the picky scientific community, but rather its practitioners and their successful patients. But you have to admit, there are two things worth thinking about when it comes to acupuncture: One, if it really were an inadequate and false treatment, could it have survived this long? And two, you can't deny that some were "cured" with its treatments. Perhaps in the future some brave doctor will venture in the unknown of tribal or traditional medicine, and document and experiment its effects. For now, I'm personally going to stick to 2-(4-isobutylphenyl) propionic acid- or as most of us call it, Ibuprofen.

Sources

Acupuncture. 27 October 2008. Wikipedia Inc. Available at http://en.wikipedia.org/wiki/Acupuncture

Analgesics. 27 October 2008. Wikipedia Inc. Available at http://en.wikipedia.org/wiki/Analgesic



COURSE SPOTLIGHT: THE CHEM 3A/3B SERIES

BY: ERIC TRIEU

Worried about taking organic chemistry at Cal? This article will give you some heads-up on what to expect.

At UC Berkeley, organic chemistry is known to be one of those classes that has the capacity to make a student break down in tears. For those who have yet to take organic chemistry, its mere mention can cause premonitory bells to ring in even the most stalwart of individuals. But while students of organic chemistry (see: pre-meds) may complain about it and rage against its professors (see: Voldhardt), there are few who argue against its existence in the pre-med curriculum. And for good reason. Organic chemistry, after all, is the bridge between chemistry and biology; it takes concepts from chemistry and places it in the context of carbon-based reactions and molecules. Biochemistry then takes these underlying concepts and applies them directly to a slew of biological reactions such as fatty-acid oxidation and the Krebs cycle. Thus for many pre-med students, organic chemistry comes to be perceived as what amounts to a necessary evil; it is a class so important that to pursue further studies without it would be unthinkable, while at the same time, it is a class so difficult that it has been known to cause students to drop this "pre-med thing" entirely. In the Pre-Med world, this description essentially depicts the typical weeder class, although that was obvious enough, even without this paragraph-long preamble.

So what sort of information should be taken from organic chemistry? How much time should one expect to spend on it in order to receive an "A"? What is the best way to approach the class? For most students taking it, Chem 3A introduces a new way of approaching chemistry. In general chemistry, chemical reactions are given to students, and students are subsequently taught to analyze the characteristics (thermodynamics and kinetics) of said reactions. In organic chemistry however, students are given random molecules and essentially taught to tinker with them to achieve a certain desired result. This sort

of concept-based problem solving, coupled with a formidable amount of required memorization, makes O-Chem a fairly difficult class. Much like taking physics for the first time, organic chemistry will require students to learn not only new material, but new ways of thinking.

As a Chem 3A tutor for the SLC, I've come across a whole range of reasons as why organic chemistry is difficult for students taking it. These reasons range from difficulty in internalizing concepts, to problems with memorization and poor lecturing. The best advice I can give is to begin studying for midterms much sooner than one would expect to begin studying. Because midterms are so often just reiterations of homework sets (though not always), doing as many problems as possible is often the best way to approach the Chem-3 series. It is generally not possible to simply review the lecture notes a million times and expect to achieve a good score. Above all, problem solving is an excellent way of seeing if you really understand the concepts, as opposed to simply having it memorized. In the same sense the F=ma is much more than just an equation with 3 variables, organic chemistry is far more than simple regurgitations of the lecture. Patience is the key to doing well in organic chemistry. Many people I know have spent well over 24 hours per weekend studying for a Chem 3B midterm, and I myself have spent several hours on only a handful of questions. However, in the end, this is definitely a class that anyone can handle; all it takes in the end is motivation, a willingness to understand concepts, and a healthy dose of time (which means don't take Chem 3B, Bio 1A, and Physics 8B concurrently!). Rather ironically, as scared of organic chemistry as I was when I first took the class, it somehow grew on me and has become one of my favorite classes. So maybe, just maybe, though you may be scared of it, you might come to like it too.





STUDENT RESOURCES



Drop in Tutoring Sessions

113 Campbell Hall

A service of the Career Center, the tutoring sessions provide individual career counselor appointments on a drop-in basis (no appointment necessary). Counselors can talk about anything from jobs to classes to majors. Every Tuesday, Wednesday, and Thursday between 12-2 pm, located down the stairs in the basement of Campbell Hall.

URL: career.berkeley.edu/Info/MakeAppt.stm

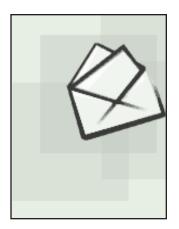
UPCOMING PREMED EVENTS

On Camera Interview Practice
Saturday, Nov 7th @ 8 AM
Career Center - Rm 104A, 2111 Bancroft Way,

UCSF School of Medicine Presentation
Thursday, Nov 13th @ 6PM
Genetics & Plant Biology - Rm 100

Making Connections for Career Success
Alumni House
Wednesday, Nov 19th @ 6PM

Career Assessment Series: Discover Your Skills
110 Barrows
Thursday, Nov 20th @ 5PM



PRE-MED TIP OF THE MONTH

As the middle of the semester approaches, and Tele-Bears begins once again, it is important for all you pre-meds to plan your extra curricular activities for next semester! It is really important to apply early for clubs and research positions. Besides having the opportunity to apply for research positions with world-renowned professors through programs such as URAP, there are many clubs and free clinics in the Berkeley area that can provide you with the essential clinical experience many medical schools are looking for. Some clinics are completely volunteer-based, so you can get first hand experience with patients; and there are some clubs that allow you to be a personal peer health advisor or a peer health teacher for a class. So get out there, ask some questions, and get involved. From one pre-med student to another, life-changing experiences may happen in the classroom, but unless you can and have applied them, med schools might just think you're not ready for what they have in store. It is very important to get in the field, because the idea of a job is completely different than the job itself.

