

Digital Literacy Beyond College

Vincent Fu

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UTSA Leadership Takeover | 28 September 2019



UTSA

THE



MY ADOBE STORY

The Undergraduate Years

2013-2017





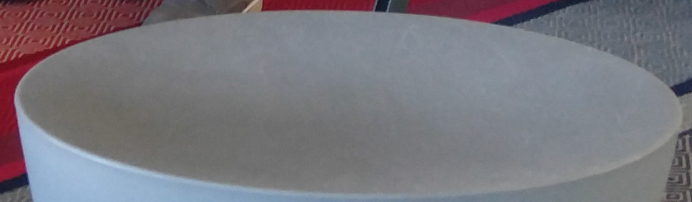
Salt Lake City





Welcome

UNIVERSITY OF UTAH
Union Programming Council





Eat. Sleep. Launch.

Adobe Creative Campus Collaborations 2016

Eat. Sleep. Launch.

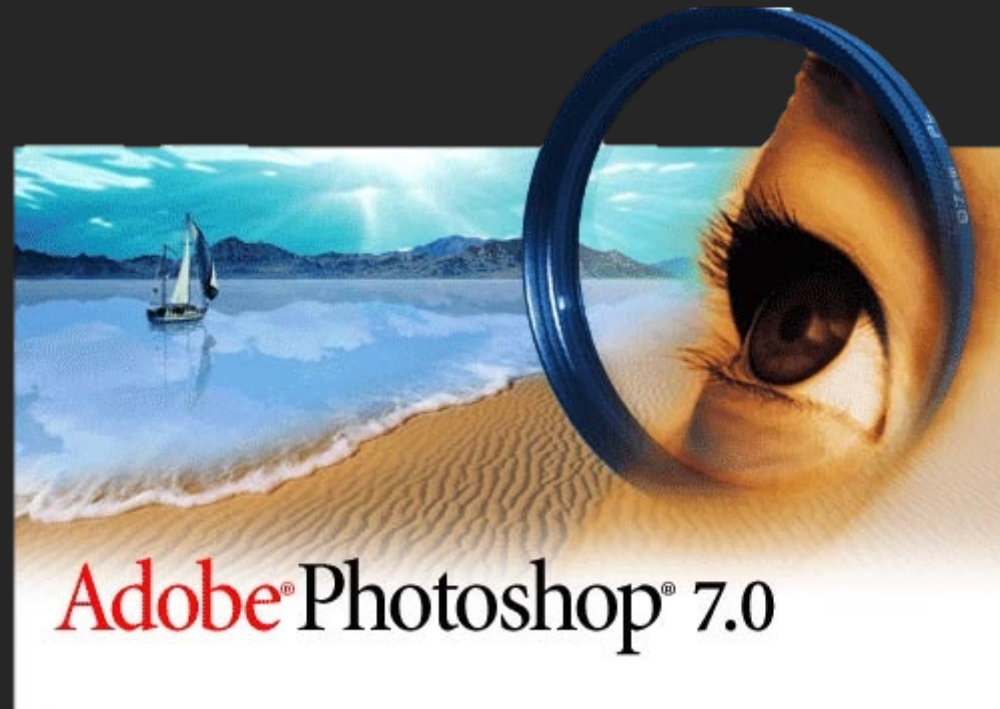
Adobe Creative Campus Collaborations 2016

Eat. Sleep. Launch.

Adobe Creative Campus Collaborations 2016



EARLY CHILDHOOD





HIGH SCHOOL





HOOKED ON ADOBE





STARTING COLLEGE





PROJECT HIGHLIGHTS



Y GUAST
9:00p-2:00a



@YOURCAMPUSLIFE



Adobe Customer Story

Transferring creative skills to the workplace.

University of Utah graduate finds success in the workplace using skills gained through Adobe Creative Cloud.



"Having access to Adobe Creative Cloud throughout college opened doors for me in ways that I never could have imagined."

Vincent Fu, Digital Marketing Manager, ProLung

SOLUTION

Adobe Creative Cloud

RESULTS



Successfully communicated **COMPLEX** ideas visually



Met any **CHALLENGE** to contribute to the company



Found success in a competitive **WORKFORCE**



OPENED DOORS to new career options





It's a way of thinking.



VISUAL THINKING IN SCIENCE

LAMINININS AS A POTENTIAL ENHANCER OF BETA CELLS

PROLIFERATION AND SUBSEQUENT GENE EXPRESSION FOR THERAPEUTIC TREATMENT OF DIABETES MELLITUS



VINCENT FU, UNIVERSITY OF UTAH; IN ASSOCIATION WITH SYMBIOCELLTECH, UNIVERSITY OF UTAH RESEARCH PARK

INTRODUCTION

Type I Diabetes Mellitus (T1DM), previously known as insulin-dependent or juvenile diabetes, is characterized by deficient insulin production caused by autoimmune attacks on insulin-producing pancreatic islet beta cells. The mechanism of this autoimmunity is not fully clear nor preventable with current clinical knowledge.

Despite available insulin therapies to reduce the burden of diabetes, many patients still develop complications that compromise multiple organs and ultimately result in early death.

The number of people with diabetes has risen from 108 million in 1980 to 422 million in 2014.

World Health Organization, 2016



SymbioCellTech has developed a therapeutic that, after a single treatment, has been shown in pre-clinical testing to be a lifelong functional cure for T1DM without immunosuppressive agents or even external insulin treatment. Based on laboratory tests performed both in parallel and as a result of my research at SCT in 2015 and 2016, we have received FDA approval to

SymbioCellTech has successfully combined mesenchymal stem cells with islet cells for our therapeutic.



conduct pilot studies in insulin-dependent diabetic pet dogs and clinical trials in humans.

The key to successful development of the SCT therapeutic has been to produce islet cells *in vitro* resulting in a large quantity of cells and cells with high potency, i.e. the expression of relevant genes for curing T1DM (namely insulin, glucagon, and others). These islets are then grown together with mesenchymal stem cells to form "neo-islet" aggregates with properties of both cell types (SymbioCellTech, 2017).

Although islet beta cells are known to be difficult to culture and retain *in vitro*, a number of studies have demonstrated the enhancing effects of laminins on proliferation rates and potency of cell types that are usually difficult to culture. This led to the hypothesis that growing islet cells in laminin-enhanced cultures will improve 1) proliferation rates and 2) gene expression.

METHODS

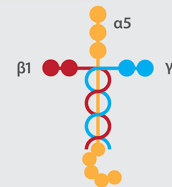
Islet beta cells from two dogs that grew well in previous experiments were selected for the treatment. These islets were cultured in parallel in identical culture flasks, half with human recombinant laminin-511 coatings that were manually applied to the flasks prior to seeding. After allowing all cultures ample time to achieve the necessary adhered cell density for passaging (sequential cell expansion), each culture was passaged for about one week per passage. Cultures were passaged continuously until the cells took an extended amount of time to reach ideal confluence, or failed to

reach confluence at all, which usually occurred around the fourth passage. A sample of cells from each culture and passage was prepared for Real-Time PCR analysis throughout the culturing and passaging process, and cell counts were also documented.

Both parts of our hypothesis were thus tested through our parallel culturing protocol. Cell counts and culture expansion rates served as a measure of beta cell proliferation, while the RT-PCR analysis measured gene expression across sixteen canine gene primers.

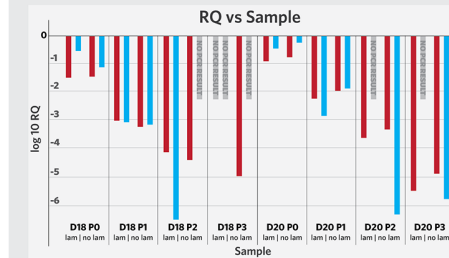
OVERVIEW OF LAMININS

Laminins are a naturally-occurring group of heterotrimeric proteins found in the extracellular matrix, and play a major role in forming the basal lamina protein network in the basement membranes of most cells in the body. Colloquially called "the glue of life", they are biologically active, influencing the adhesion, migration, and cell differentiation processes of their surrounding cells.



The domain diagram above shows laminin-511, which has been found to enhance growth in mouse embryonic stem cells and thus was hypothesized as an enhancer of islet beta cells in this study.

RESULTS



Proliferation Rate

Cell counts were approximately equal between laminin-enhanced cultures and unenhanced cultures. Laminin enhancement only yielded greater cell counts in 2 out of 16 cultures (all grown for 7 days). All other cultures showed slower proliferation rates with laminin.

Gene Expression (above)

RT-PCR data were approximately equal between laminin-enhanced cultures and unenhanced cultures; for each passage, relative quantitation data (above) showed an approximately equal level of **insulin (INS)** and **glucagon (GCG)** gene expression between cultures.

CONCLUSIONS

r-Laminin-511 does not bear significant effects or enhancing effects on the growth of our dog islet cultures.



In aggregate, the present data demonstrate that there is no statistically significant difference in the growth rate, gene expression, or potency between cultures expanded from the same dog islets, disproving our hypothesis about laminins.



Vincent Fu
University of Utah | Department of Biology | v.fu@utah.edu

Study conducted with funding and laboratory assistance from SymbioCellTech, LLC. www.symbiocelltech.com
All dog tissues were the generous gift of Dr. Frank Sachse through an NIH sharing agreement.





MY ADOBE STORY

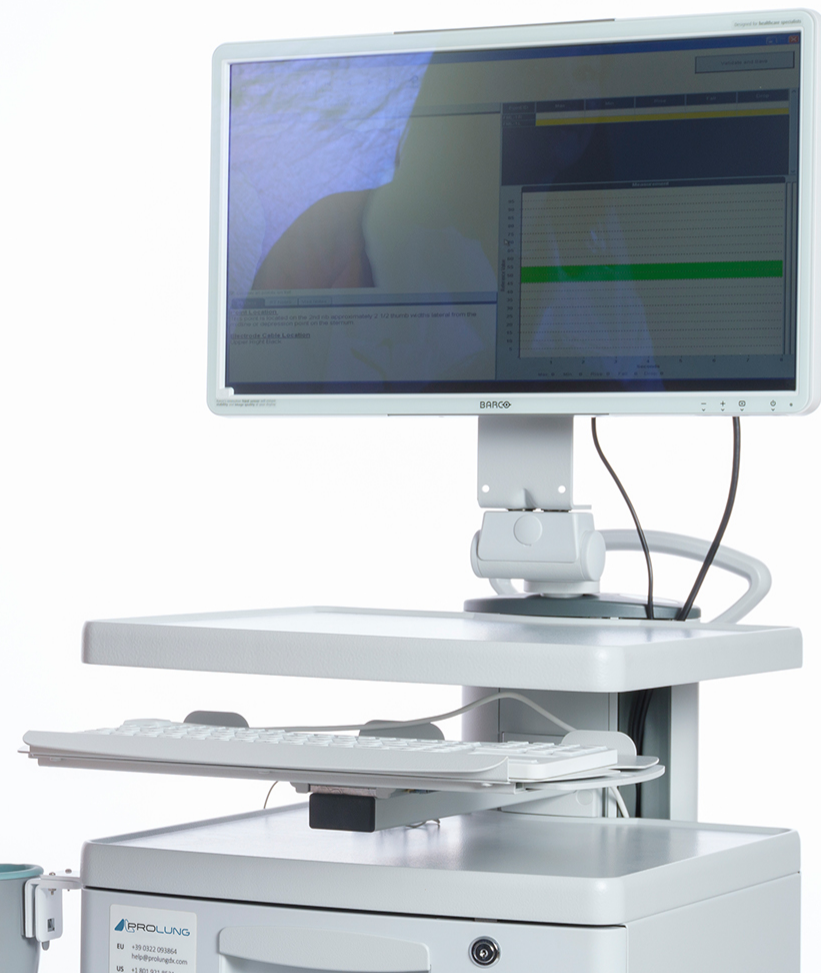
The Real World

2017-2018





BRÜLLUNG



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ILLUSTRATOR IN ACTION

COMPANY OVERVIEW

ProLung

ProLung Analytic Technology for the Lung

ProLung Test, is a non-invasive, painless, and immediately assess the risk of malignancy cancer. Computed Tomography (CT) scanning lung cancer but requires a “watchful” approach to identify potentially cancerous growth in conjunction with the initial discovery of a tumor to rapidly assess the risk of malignancy factor which must be determined prior to surgery.

ProLung technology assists a gravely underserved patient population. Our experienced management team supported by thought leaders in radiology and surgery, and oncology. ProLung clinical performance of 90% accuracy compared to tissue biopsy. ProLung recurring revenue business model.

LUNG CANCER OVERVIEW

Lung cancer is the leading cause of cancer death among both men and women. Mortality rates are higher than the next four leading cancers (colorectal, breast, pancreatic, prostate) combined.

Today, only 17% of those diagnosed with lung cancer will survive 5 years. This low survival rate is due, in part to the fact that 85% of lung cancers are diagnosed in later stages.

| Metric | Value |
|--|-------|
| Average Survival (5-year) | 17% |
| Late-Stage Diagnosis Survival (Distant Metastasis) | 5% |

Studies suggest that survival rates can dramatically increase by **at least 38%** with early stage detection. Early detection of lung cancer is the key to making a difference in survivability.

| Scenario | Survival Rate |
|----------------------|---------------|
| Current (17%) | 17% |
| With Early Detection | 55% |

Early Detection +38%



DIGITAL MARKETING MANAGER PROMOTION - SEPTEMBER 2017

THE PROLUNG TEST REPORT

The value of knowing now.

- Borderline score: repeat test
- Decreased risk of lung cancer

ProLung Test Report

Patient Information
 Patient ID: 12345678
 Patient Initials: F, L
 Birth Date: MM/DD/YYYY
 Scan Received On: MM/DD/YYYY
 Date of Report: MM/DD/YYYY

Clinic Information
 Ref Doctor: Dr. Doctor
 Ref Doctor Email: doctor@clinic.com
 Ref Nurse Email: nurse@clinic.com
 Org: Clinic
 Address: 1234 Street
 ZIP: City, Country: 12345, City, Country
 Phone: +1234.567.8910

Test Score: 0.15

ProLung Test Description
 The ProLung System is indicated for use in patients who have undergone computed tomography in which a pulmonary lesion of indeterminate significance has been detected. The ProLung Test is indicated for use as an aid in the risk stratification of such patients for the occurrence of lung cancer. Patients with elevated ProLung Test Scores are at an increased risk of developing lung cancer.

Results
 ProLung Test Score Chart
 Reference Interval 0.00 - 1.00
 Decreased Risk for Lung Cancer < 0.250
 Increased Risk for Lung Cancer > 0.250

For any inquiries, please contact ProLung via phone at +1301.756.0729 or email at help@prolunginc.com.
 Caution: The ProLung Test is not intended for all patients or all circumstances. Disregarding the Patient Selection Tool



VALUE MEDICINE: STAKEHOLDERS



REIMBURSEMENT

Estimated \$16B in cost savings when deployed as adjunct to LDCT screen*

*Source: CMS codes G0296 and G0297 for annual LDCT lung cancer screening and NCCN Lung Cancer Screening Guideline version 1.2017

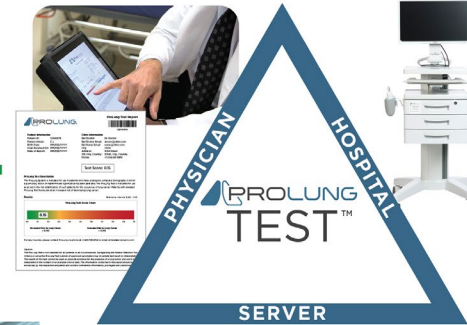


BUSINESS MODEL

PHYSICIAN REPORT

- Digital Test Report
- Quality Check
- Patient Summary

HOSPITAL-PHYSICIAN REVENUE



CAPITAL EQUIPMENT

ProLung Test™ Scan System
SALES REVENUE

DISPOSABLES

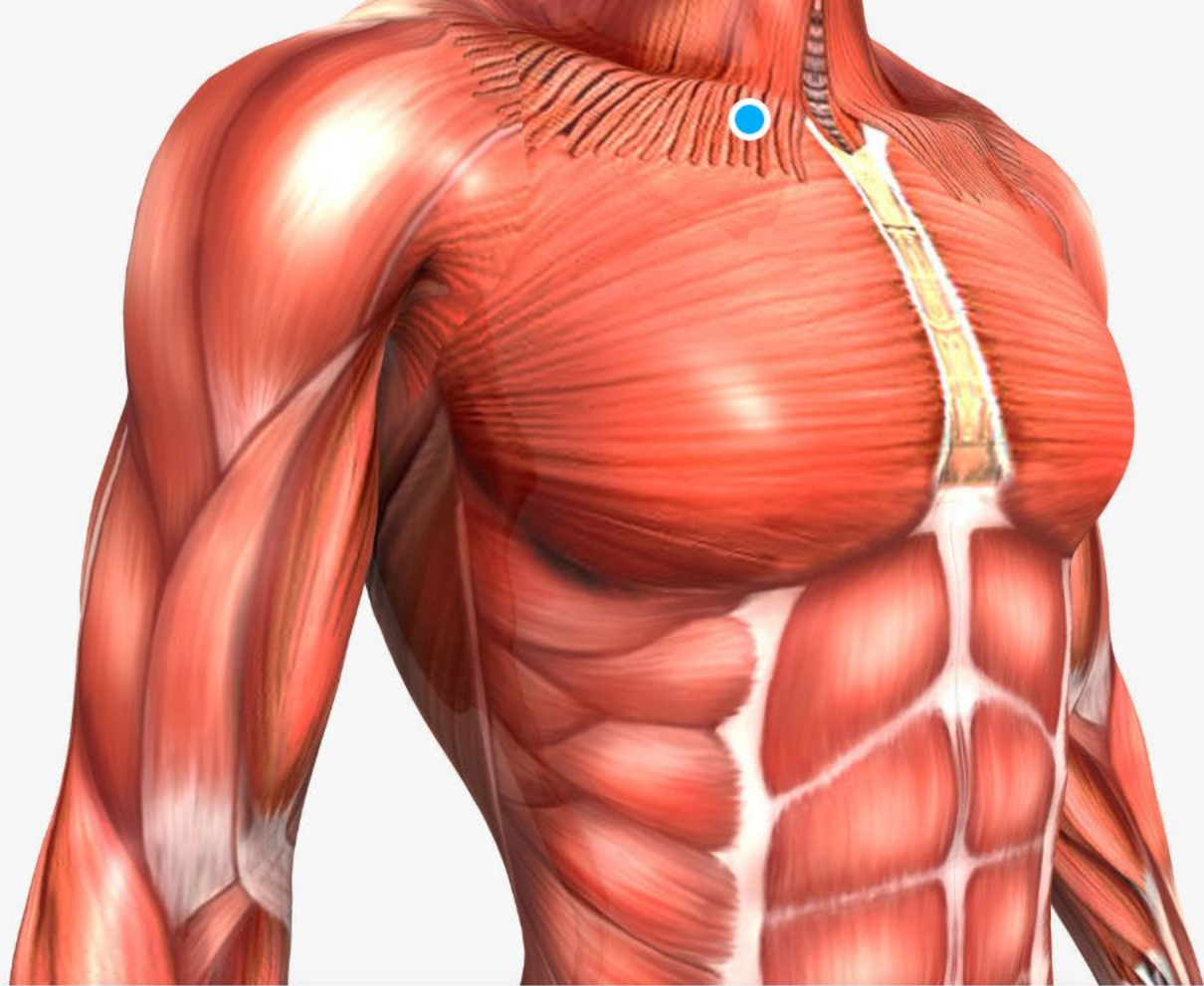
ProLung Test Kit
RECURRING REVENUE

SERVER
 PROLUNG CLINICAL DATABASE
 DATA ACQUISITION
 Accumulate Data in Clinical Database for Research
 ONGOING RESEARCH VALUE



roLung Technician

- Collect Data
- Upload Results
- Delete Session
- Report Issue
- 24/7 Support
- Software Updates
- Institution Profile
- Reorder Test Kits

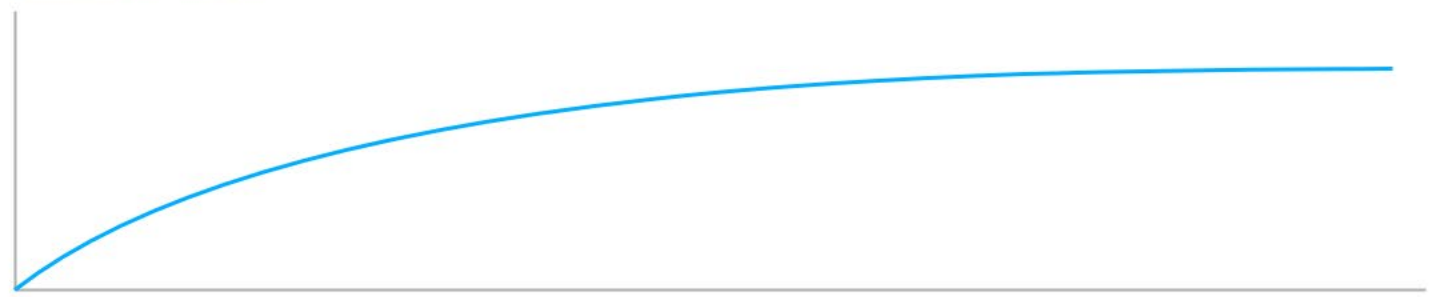


Scan Point 16 of 62

anterior border of the medial half of the right clavicle



Bioconductance Data



Technician Notes

Patient did not remain still during scan. May require repeat procedure if data is not clear.

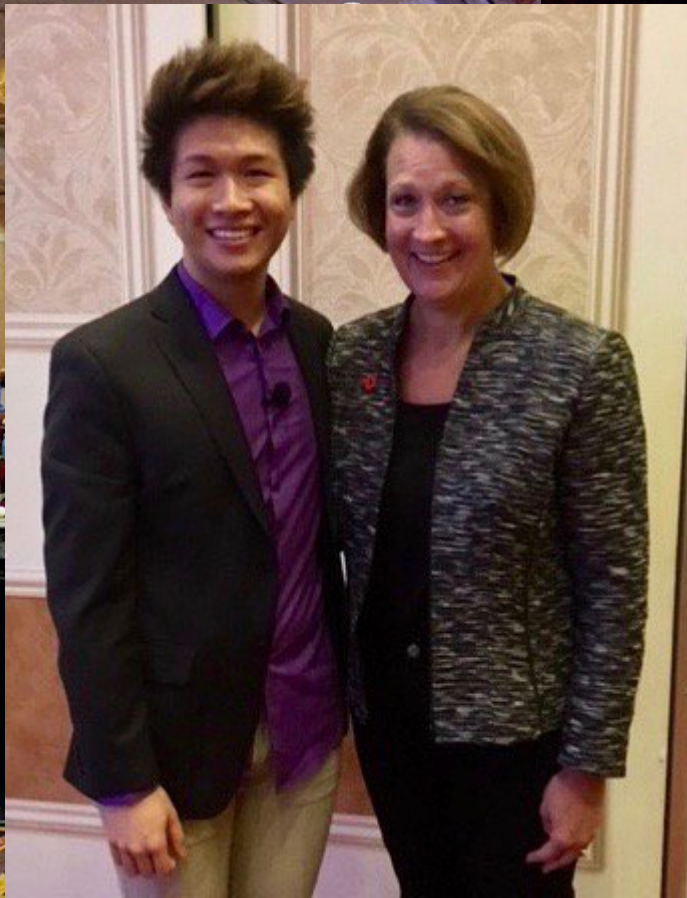


OCTOBER 2017

**All this was great, but I
wanted to do more.**

arctcfx

ARCTIC FOX DESIGN, LLC





MY ADOBE STORY

Medical School

2018-present





STILL HOOKED ON ADOBE



Relationships in Healthcare

PAGE

Share

11 0



Heart Murmurs

PAGE

Share

14 0



Ouch.

Share



PAGE

13 0

AN OVERVIEW OF ANTIDEPRESSANTS

SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIs)

- frequently used as **first-line** antidepressants
- highly effective, tolerable, and generally safe in overdose
- potent treatment for **anxiety**; also effective for panic, OCD, social anxiety, PTSD, body dysmorphia, and eating disorders

PHARMACODYNAMICS selectively increase serotonergic activity by decreasing action of presynaptic serotonin reuptake pumps (60-80%), leading to prolonged postsynaptic serotonin receptor occupancy

CONTRAINDICATIONS patients with hypersensitivity; patients who have taken a monoamine oxidase inhibitor (MAOI) in the previous two weeks due to interaction with SSRIs; patients taking other serotonergic medications



Celexa (citalopram)



Lexapro (escitalopram)



Prozac (fluoxetine)



Paxil (paroxetine)



Zoloft (sertraline)

SEROTONIN-NOREPINEPHRINE REUPTAKE INHIBITORS (SNRIs)

- primarily used for **depressive disorders** and **anxiety disorders**
- secondarily used for **chronic pain syndromes**
- can be effective for **body dysmorphia, OCD, and PTSD**; menopausal hot flashes, urinary incontinence, and vulvodynia may also respond to SNRIs

PHARMACODYNAMICS block presynaptic serotonin and norepinephrine reuptake pumps, leading to prolonged postsynaptic serotonin and norepinephrine receptor occupancy; SNRIs vary in affinity for each type of pump



#socialmedia | #digitalscholarship

DIGITAL MD

new elective this fall @ CUSOM

limited spots — sign up now





HEY THAT'S GREAT BRO BUT

Where Do I Start?





KNOW YOURSELF

"We do not change as we grow older, we simply become more clearly ourselves." - Lynn Hall





FIND YOUR BALANCE

DESIGN

arctcfx



FITNESS

#fitfox

MEDICINE

MD



FIND YOUR PERSONAL BRAND

**Your brand is the
single most important
thing you need to be
successful.**



FIND YOUR PERSONAL BRAND

**No matter your
interests or field of
work, a strong
personal brand is key.**



FIND YOUR PERSONAL BRAND

**Having a brand will
allow you to be
successful as a young
professional.**



Building Your Personal Brand

Breakout Session | 12:00pm today

arctcfx x 





Let's Connect

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