The Computer Science Professionals' Hatchery

Incorporating
Focused Professional Skills, and
Inclusion, Diversity & Social Justice into
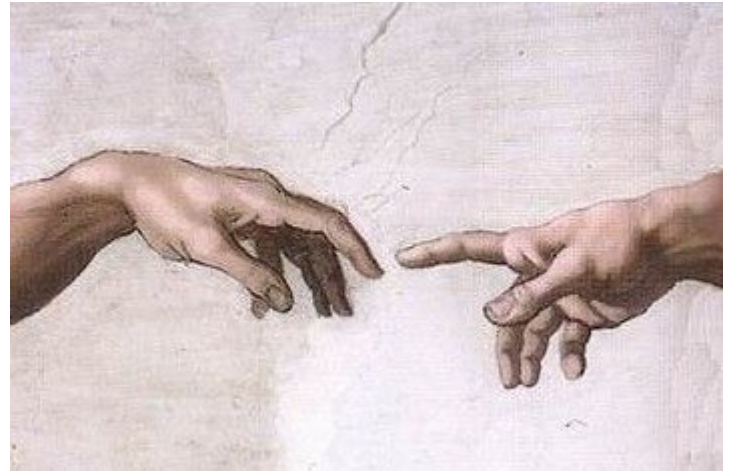# the Computer Science Curriculum

Tim Andersen, PhD   Dianxiang Xu, PhD   Don Winiecki, EdD, PhD
Amit Jain, PhD   Noah Salzman, PhD   Carl Siebert, PhD
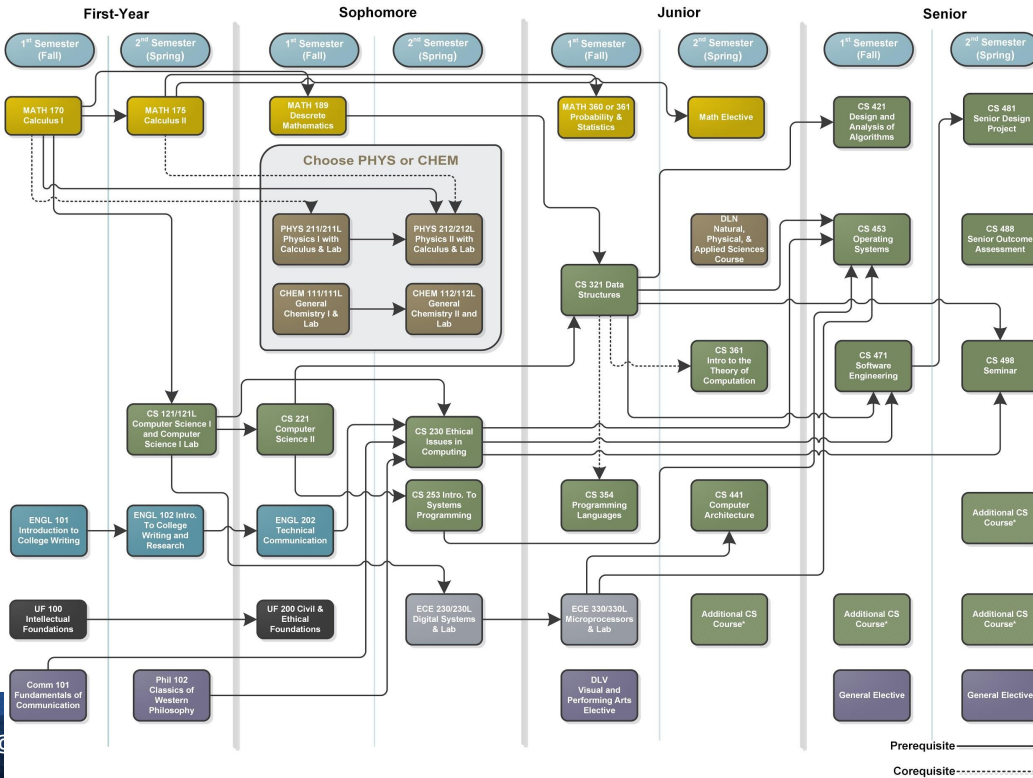
In the Beginning

With a gaze frozen in time and seemingly ratified by a divine hand …

https://en.wikipedia.org/wiki/File:Hands_of_God_and_Adam.jpg

The Curriculum Was 'Only Technical'

Boise State University Undergraduate Computer Science Pre-requisites, 2016-2017

And the prevailing 'we' thought it was good

'Nobody' complained, and it was all 'very obviously' meritocratic.

If you couldn't handle it, it was your own fault

Then, the 21st Century
(after the non-responsiveness of the 20th Century)

Those 'nobodies' started to be heard, and it was all very puzzling. After all, CS was — as *they* kept on insisting — very meritocratic.

http://says.com/my/fun/8-creative-emoji-comebacks-to-use-for-all-your-biggest-whatsapp-problems

Been there, done that…

"Easy to fix," some said.
"Just put an ethics course in there somewhere…"

"It'll be good."

From left, Jeremy Weinstein, Hilary Cohen, Mehran Sahami and Rob Reich of Stanford are developing a computer science ethics course for next year. Christie Hemm Klok for The New York Times

Sam Hodgson for the NYTimes: https://www.nytimes.com/2018/02/12/business/computer-science-ethics-courses.html

And it was (kinda) good

(but...)

Put a good person in a bad system, and the bad system wins almost every time (Rummler & Brache, 1995)

http://envisioningtheamericandream.files.wordpress.com/2014/04/don-draper.jpg

So, change the system

You're all doing that too.
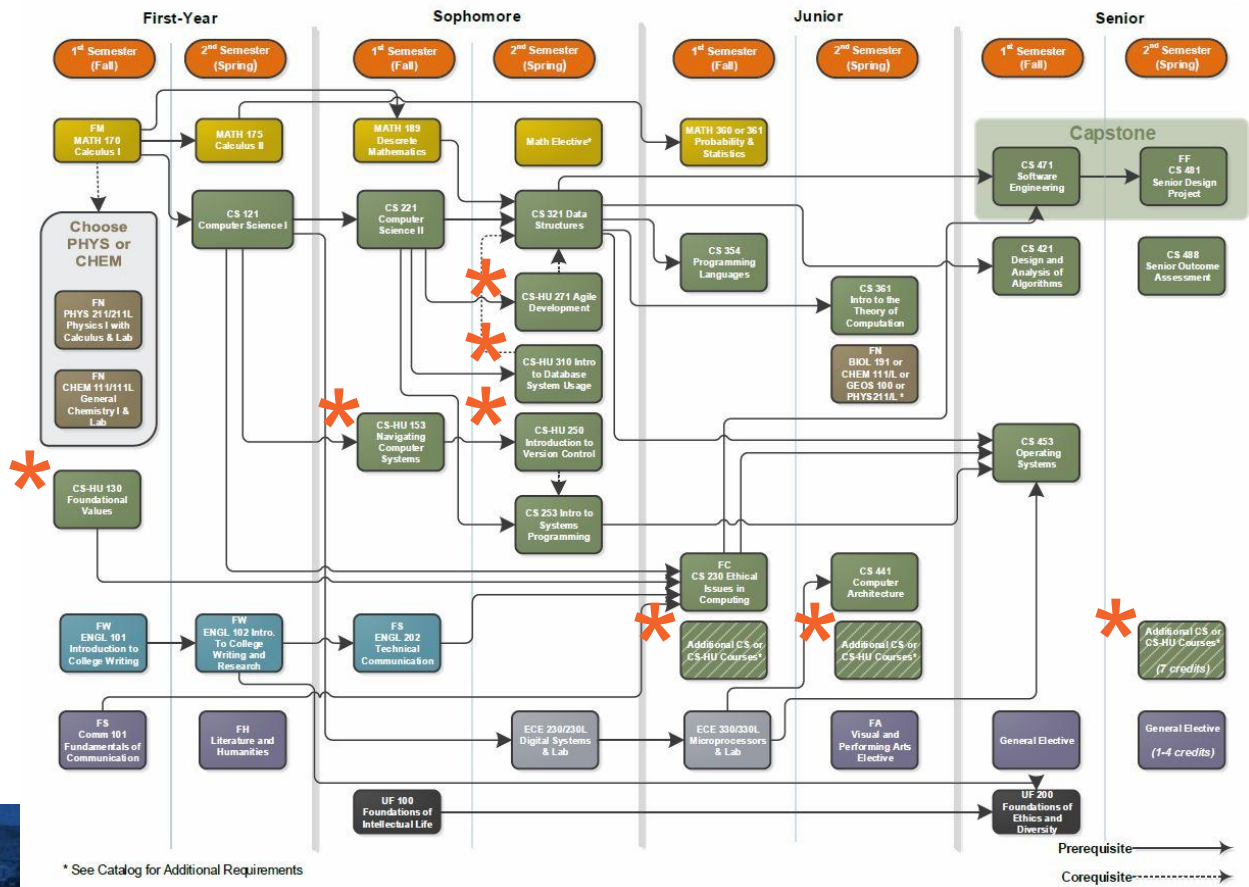
So what are our innovation(s)?

Embed (sprinkle?) 1-credit courses through curriculum that:

1. Incorporate specific technical skills important to local employers
2. Critical ideas and practices to promote inclusion, diversity & social justice

The New Normal

CS-HU Additions
- 5 Required
- 5 Electives Available

Embedding content that is outside the 'old normal' throughout the curriculum.

- Things *outside* the 'old normal' *(but inside society)* are an essential part of the new curriculum, just as they are an essential part of professional practice in Computer Science.

We Partner With Industry To Identify Technical Skills & Social Needs
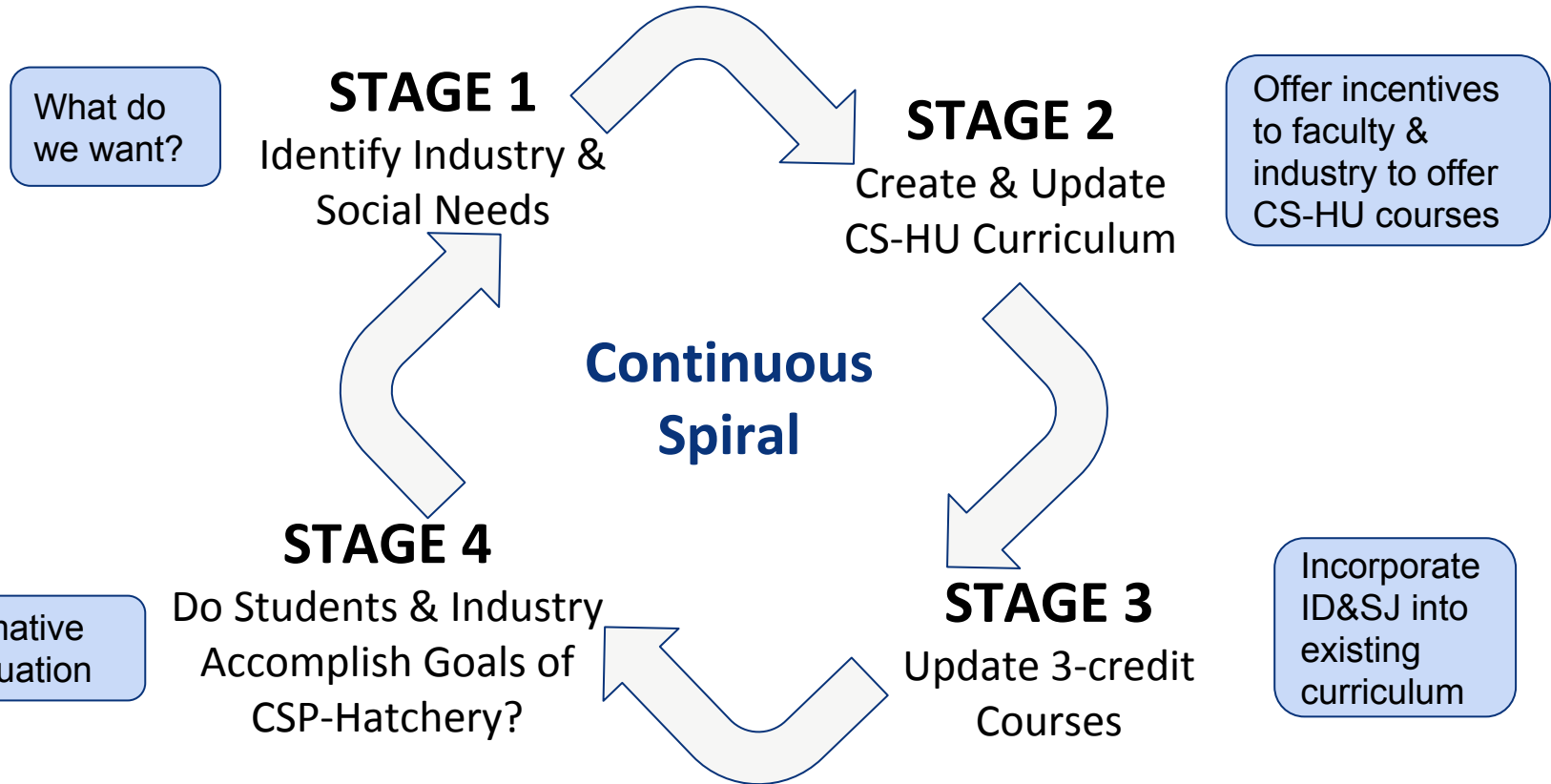
Current CS-HU (CS-Hatchery Units)

1-credit courses in technical and professional skills, each of which also embeds case studies that highlight issues of ethics, inclusion, social justice

- CS-HU 130 Foundational Values
- CS-HU 153 Navigating Computer Systems
- CS-HU 250 Intro to Version Control
- CS-HU 269 HCI Concepts
- CS-HU 271 Agile Development

- CS-HU 274 Software Testing
- CS-HU 310 Intro to Database System Usage
- CS-HU 375 Secure Programming
- CS-HU 390 Interviews, Jobs, Careers
- CS-HU 398 Current Topics in CS
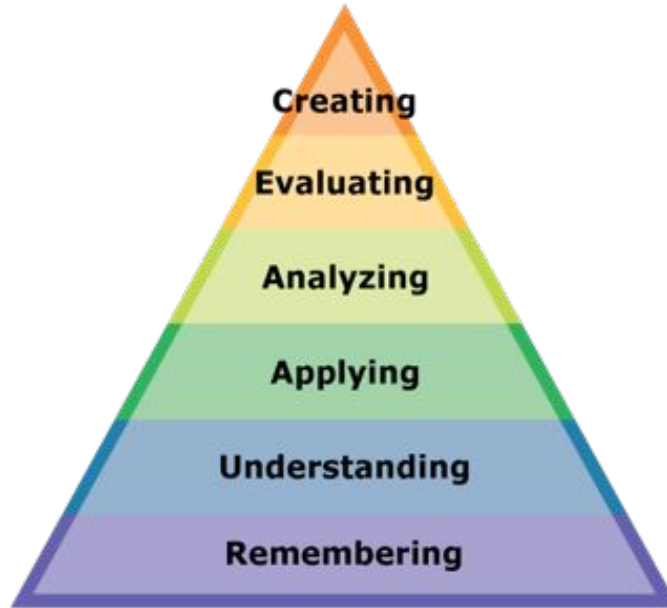
Not everyone sees it that way

(but new faculty seem to...)

STAGE 1
Identify Industry &
Social Needs

What do
we want?

STAGE 2
Create & Update
CS-HU Curriculum

Offer incentives
to faculty &
industry to offer
CS-HU courses

Continuous
Spiral

STAGE 4
Do Students & Industry
Accomplish Goals of
CSP-Hatchery?

Formative
Evaluation

STAGE 3
Update 3-credit
Courses

Incorporate
ID&SJ into
existing
curriculum

All CS-HU Courses Use EBIPs

(Evidence Based Instructional Practices)

All CS-HU Courses Include ID&SJ

(Customized to fit content as indicated by principal instructor)