# Professional Evaluation and Growth Plan

Jordan C Hanson, PhD

August 3, 2021

# Contents

# Chapter 1

# Introduction


Opening words.

## 1.1 My Background

### 1.1.1 Academic Origins

### 1.1.2 My Family and East Los Angeles

## 1.2 Progress at Whittier College

## 1.3 Scope of this Report

# Chapter 2

# Impact of COVID-19

A

## 2.1 Keeping a Sense of Humor under Quarantine

A

## 2.2 Growing our Family during the Pandemic

A

## 2.3 Working from Home with Children

A

## 2.4 Tenacity and Adaptation

A

# Chapter 3

# Teaching

## 3.1 Teaching Philosophy: A Philosophy of Growth

A

**Elec**

B

## 3.2 Addressing Equity and Inclusion

A

### 3.2.1 Open Educational Resources (OER)

B

### 3.2.2 Making Arrangements for a Diverse Group of Students

C (10to8) (Take-home tests) (Flexibility) (Arranging assessment schedule) (Take-home final projects)

### 3.2.3 Engaging with the Center for Engagement with Communities: Artemis Program

### 3.2.4 Influences on Course Creation: Latin American Science

## 3.3 Methods of Teaching Physics

A

### 3.3.1 Physics Education Research (PER) Modules

B

### 3.3.2 Traditional Teaching Modules

C

### 3.3.3 Laboratory Modules

D

### 3.3.4 Online Modules

E

## 3.4 Introductory Course Descriptions

Don't forget intro to statistics!

**Algebra-Based Physics**

B

## 3.5 Analysis of Course Evaluations: Introductory Courses

A

**Hickisy Pickisy**

B

## 3.6 Advanced Course Descriptions

A

**Elec**

B

## 3.7 Analysis of Course Evaluations: Advanced Courses

A

**Elec**

B

## 3.8 Liberal Arts Course Descriptions

A

**Elec**

B

## 3.9 Analysis of Course Evaluations: Liberal Arts Courses

A

**Elec**

B

## 3.10 College Writing Seminar Course Descriptions

A

**Elec**

B

## 3.11 Analysis of Course Evaluations: College Writing Seminar

A

**Elec**

B

## 3.12 Outlook

A

**Elec**

B

# Chapter 4

# Scholarship

A

## 4.1 The History of IceCube, Cosmic Rays, and Neutrinos from Deep Space

B

### 4.1.1 Why Antarctica?

C

### 4.1.2 Radio Expansions: IceCube Generation 2

D

## 4.2 My Professional Background

E

### 4.2.1 Prior to Whittier College

F

### 4.2.2 Successes with Our Students at Whittier College

G

### 4.2.3 Forming Connections with the Office of Naval Research (ONR)

H

A

## 4.3 Five Areas of Research Focus

B

### 4.3.1 Computational Electromagnetism

C

### 4.3.2 Mathematical Physics

D

### 4.3.3 Firmware, Software, and Hardware Development

E

### 4.3.4 Open-source Antenna Design

F

### 4.3.5 Drone Development and The Whittier Scholars Program

G

## 4.4 Invitation to Become a Member Institution of IceCube

H

A

## 4.5 CEM and Engineering with the ONR

B

### 4.5.1 CEM Phased Array Design for Radar

C

### 4.5.2 3D Printing of RF Antennas

D

### 4.5.3 Connections to Neutrino Physics Research

E

### 4.5.4 Broader Applications

F

Don't forget the italians. A

## 4.6 My Vision for Collaboration between ONR and Whittier College

B

### 4.6.1 Building Student Success after Whittier College

C

### 4.6.2 Equipping Whittier College Laboratories

D

### 4.6.3 Financial Support

E

# Chapter 5

# Advising and Mentoring

## 5.1 Connections to Teaching and Service

### 5.1.1 Inclusion, Community, and a Sense of Belonging

## 5.2 Advising and Mentoring First Year Students

A

### 5.2.1 First Year Advising, by the Numbers

B

### 5.2.2 Navigating the First Year

C

### 5.2.3 Discernment of Major

D

### 5.2.4 Equity of Access

E

### 5.2.5 Inclusion and Belonging: Activities with First Year Advisees

## 5.3 Advising and Mentoring Majors in Physics, ICS, and 3-2 Engineering

A

### 5.3.1 Discernment within STEM: Major Selection, and Diverse Pathways to Graduation

B

### 5.3.2 Graduate School

C

### 5.3.3 Private Sector

D

#### Reverse Engineering Social Media

E

### 5.3.4 Letters of Recommendation

F

## 5.4 Advising and Mentoring Whittier Scholars Program Majors

A

### 5.4.1 Interdisciplinary Connections and Recruiting Students

B

### 5.4.2 Organization of Field Deployments

C

#### United States Antarctic Program

Describe the attempt to deploy Nicolas to Antarctica

### 5.4.3 Organizing the Program of Study and Executing

E

### 5.4.4 Polishing the Finished Product

F

# Chapter 6

# Service

## 6.1 Committee Service

A

### 6.1.1 Enrollment and Student Affairs Committee, Year 1

B

### 6.1.2 Enrollment and Student Affairs Committee, Year 2

Write about how I learned about orientation issues from these meetings
Interactions with Falone Serna

### 6.1.3 Educational Resources and Digital Liberal Arts Committee

Creation of senior thesis archival program

### 6.1.4 Whittier Scholars Program Advisory Board

I was invited! Sort of.

## 6.2 Departmental Service

This one can be stronger, maybe

### 6.2.1 Departmental Self-Study

### 6.2.2 Departmental Annual Assessment

## 6.3 First Year Orientation

A

### 6.3.1 Connection to Teaching and Advising

B

### 6.3.2 Inclusion and Belonging

C

## 6.4 Open Educational Resources (OER) Workshops

openstax, oercommons, and openstax tutor, dspguide.com

### 6.4.1 Open Educational Resources (OER) and Equity

### 6.4.2 The Tradition of Open Access/Open Source in STEM

**The OpenStax Platform**

**Integrations with Machine Learning**

**Open Access in Digital Signal Processing**

### 6.4.3 Lectures at Wardman Library Collaboratory

## 6.5 Center for Engagement with Communities: The Artemis Program

openstax, oercommons, and openstax tutor, dspguide.com

### 6.5.1 Open Educational Resources (OER) and Equity

### 6.5.2 The Tradition of Open Access/Open Source in STEM

**The OpenStax Platform**

**Integrations with Machine Learning**

**Open Access in Digital Signal Processing**

### 6.5.3 Lectures at Wardman Library Collaboratory

## 6.6 Summer Working Group Contribution

A

**Elec**

B

# Chapter 7

# Conclusion

Jordan C. Hanson, PhD
Assistant Professor, Department of Physics and Astronomy
Science and Learning Center, 212
Whittier College
562.907.5130
jhanson2@whittier.edu

# Chapter 8

# Supporting Materials