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## COLORADO SPRINGS UNDERGRADUATE RESEARCH FORUM

Saturday, April 9, 2022 | 9:00am–5:00pm

### Keynote Speakers

Ken O'Donnell, PhD

*Vice Provost at California State University, Dominguez Hills*

Robin Scholfield and Jo-Ellen Becco

*Faculty and Directors of High Impact Practices | PCC*

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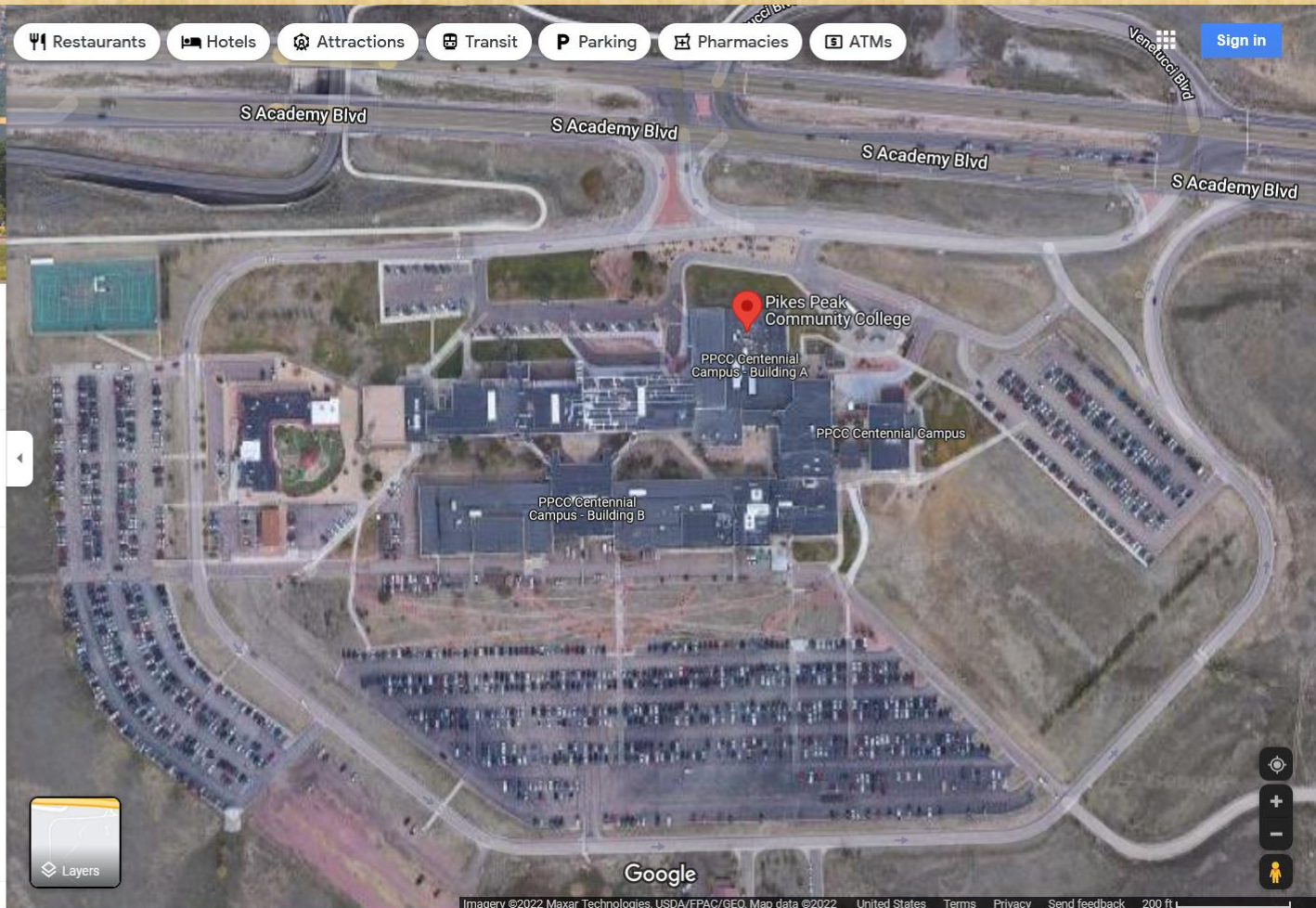


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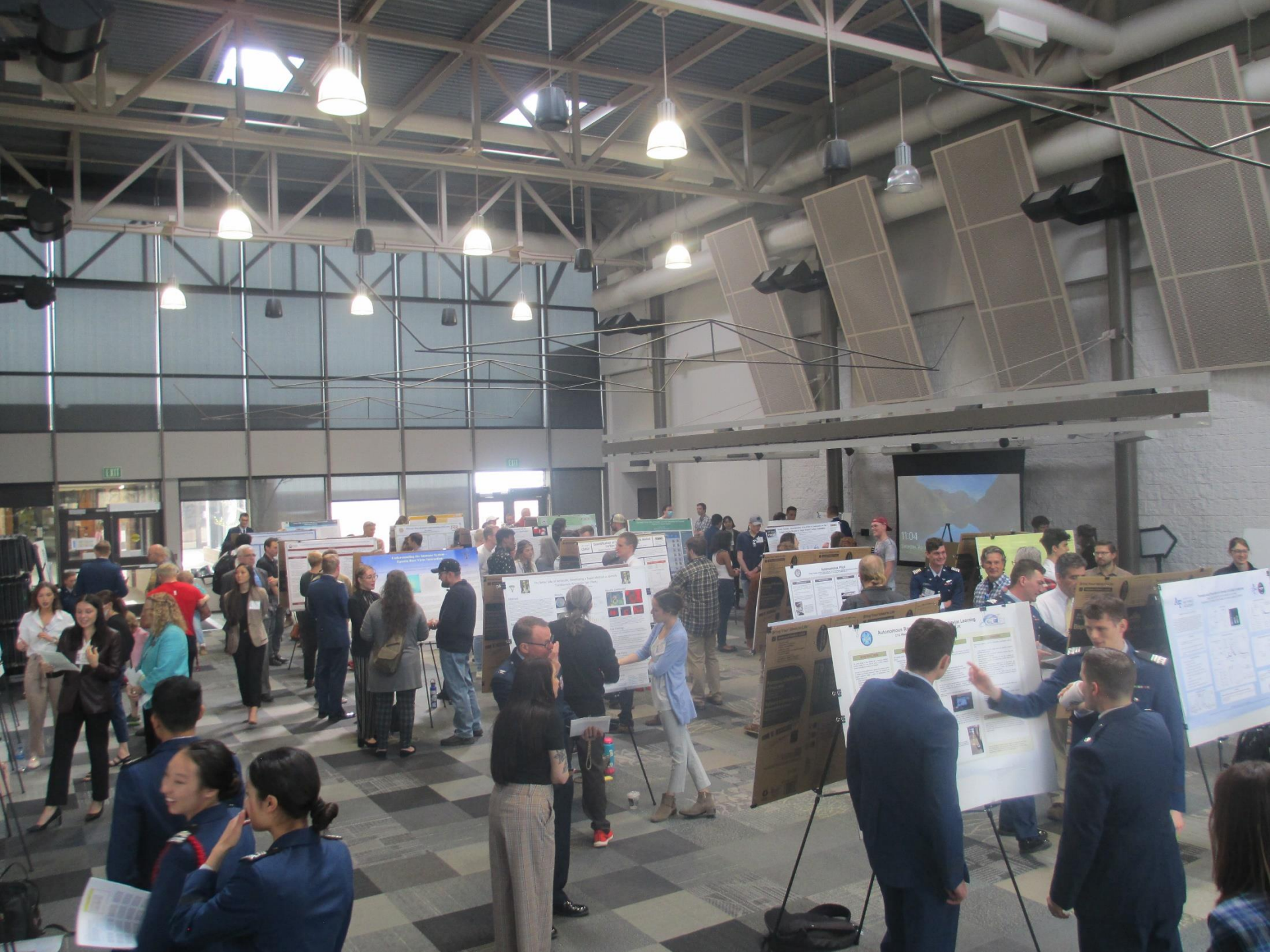
**COLORADO  
COLLEGE**



**Madeleine  
Ross**

**Maya  
Sikora**

**Julia  
Nolan**







Dr. [Name] (PhD) [Title]  
Dr. [Name] (PhD) [Title]







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**Orthorexia: When disordered eating becomes a moral good**

Maya Sikora  
Colorado College, Colorado Springs, CO

Psychology

**Introduction**  
Historical Connection between Fasting and Moral Righteousness

- Women saints of the High Middle Ages engaged in asceticistic fasting and abstinence practices in the kitchen.
- Fasting was an indicator of spirituality, linked with the First English inhibition of anorexia nervosa in 1673 (Bartlett, 1982).

**Moral Foundations Theory (MFT)**

- Jonathan Haidt's 6 pillars of morality include purity/sanctity.
- Participants place 6 behavioral vignettes, producing an aversion to a harm from either spiritual choice or health health (2012).

**Moral Language about Food**

- "Good" or "healthy" food choices imply good health, healthy body, high self-esteem, attractiveness, morality, and because of the purity.
- Overweight is seen as a moral transgression promoting competition between a woman (Smith & Smith, 2010).

**Orthorexia Nervosa (ON)**

- Defined as a pathological obsession with healthy eating.
- Psychological symptoms often include:
  - rigidity and control over food and routine
  - judgments of self and others based on whether one is following the "healthy" diet
  - negative emotional impact due to food adherence to the diet
  - impaired social, emotional, or even physical functioning (Chen, Berry & Wang, 2017)

**Participation**

- Orthorexia-like eating disorders have been associated with perfectionism & narrow identity (Hewitt, et al., 2012)

**Moral Purity of Food and Eating (MPE)**

How much was developed for this study to assess moral purity associated specifically with food choices (Hewitt, et al., 2012)

Participants were asked to rate their agreement with the following statements:

- "I eat healthy because it's a moral imperative"
- "I eat healthy because it's a sign of a good character"
- "I eat healthy because it's a sign of a good person"
- "I eat healthy because it's a sign of a good citizen"
- "I eat healthy because it's a sign of a good worker"
- "I eat healthy because it's a sign of a good student"
- "I eat healthy because it's a sign of a good parent"
- "I eat healthy because it's a sign of a good friend"
- "I eat healthy because it's a sign of a good neighbor"
- "I eat healthy because it's a sign of a good community member"
- "I eat healthy because it's a sign of a good citizen"
- "I eat healthy because it's a sign of a good person"
- "I eat healthy because it's a sign of a good citizen"
- "I eat healthy because it's a sign of a good worker"
- "I eat healthy because it's a sign of a good student"
- "I eat healthy because it's a sign of a good parent"
- "I eat healthy because it's a sign of a good friend"
- "I eat healthy because it's a sign of a good neighbor"
- "I eat healthy because it's a sign of a good community member"

**Hypotheses**

- The MPE scale will have a positive correlation with general moral purity concerns, self-rated perfectionism, obsessive-compulsive personality traits, and healthy eating.
- ON will only be predicted by the MPE healthy eating scale, self-rated perfectionism, obsessive-compulsive personality traits, and general moral purity concerns.
- MPE will have a positive relationship with self-rated perfectionism and ON.

**Methods**

278 participants completed the survey between November 2014 - 11/18/2014 at Colorado College. The survey was completed by 170 females and 108 males. Participants were recruited from the college's email list.

**Measures**

**Moral Purity of Food and Eating (MPE)**  
All items on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

**General Moral Purity Concerns (GMPC)**  
All items on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

**Obsessive-Compulsive Personality Disorder (OCPD)**  
All items on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

**Orthorexia Nervosa (ON)**  
All items on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

**Results**

Variable	Mean	SD	Alpha
MPE	2.85	0.85	0.92
GMPC	2.95	0.95	0.93
OCPD	2.15	0.75	0.94
ON	2.45	0.85	0.91

**Table 1: Correlations between MPE, GMPC, OCPD, and ON**

Variable	MPE	GMPC	OCPD	ON
MPE	1			
GMPC	0.45**	1		
OCPD	0.35**	0.40**	1	
ON	0.55**	0.30**	0.45**	1

**Table 2: Regression Analysis of ON**

Variable	B	SE	β	p
MPE	0.15	0.05	0.30	0.001
GMPC	0.05	0.02	0.25	0.001
OCPD	0.05	0.02	0.25	0.001
Constant	1.50	0.10		

**Table 3: Regression Analysis of MPE**

Variable	B	SE	β	p
GMPC	0.10	0.02	0.40	0.001
OCPD	0.05	0.02	0.25	0.001
Constant	1.50	0.10		

**Table 4: Regression Analysis of GMPC**

Variable	B	SE	β	p
OCPD	0.05	0.02	0.25	0.001
Constant	1.50	0.10		

**Table 5: Regression Analysis of OCPD**

Variable	B	SE	β	p
Constant	1.50	0.10		

**Discussion**

Orthorexia is a pathological obsession with healthy eating. It is characterized by a rigid adherence to a self-imposed diet that is perceived to be healthy and morally superior. This study examined the relationship between moral purity concerns, obsessive-compulsive personality traits, and orthorexia. The results showed that moral purity concerns, obsessive-compulsive personality traits, and orthorexia were all significantly related. Moral purity concerns were found to be a significant predictor of orthorexia, suggesting that orthorexia may be a form of moral perfectionism. Obsessive-compulsive personality traits were also found to be a significant predictor of orthorexia, suggesting that orthorexia may be a form of obsessive-compulsive disorder. The findings of this study have implications for the treatment of orthorexia. Treatment should focus on addressing the underlying moral and psychological issues that contribute to orthorexia.

Another poster titled "The Role of Moral Purity in the Development of Orthorexia Nervosa" is visible in the background, featuring a similar layout with text and data.



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CS  
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### of Maneuvering Flight in Bats

Abstract

Introduction

Methods

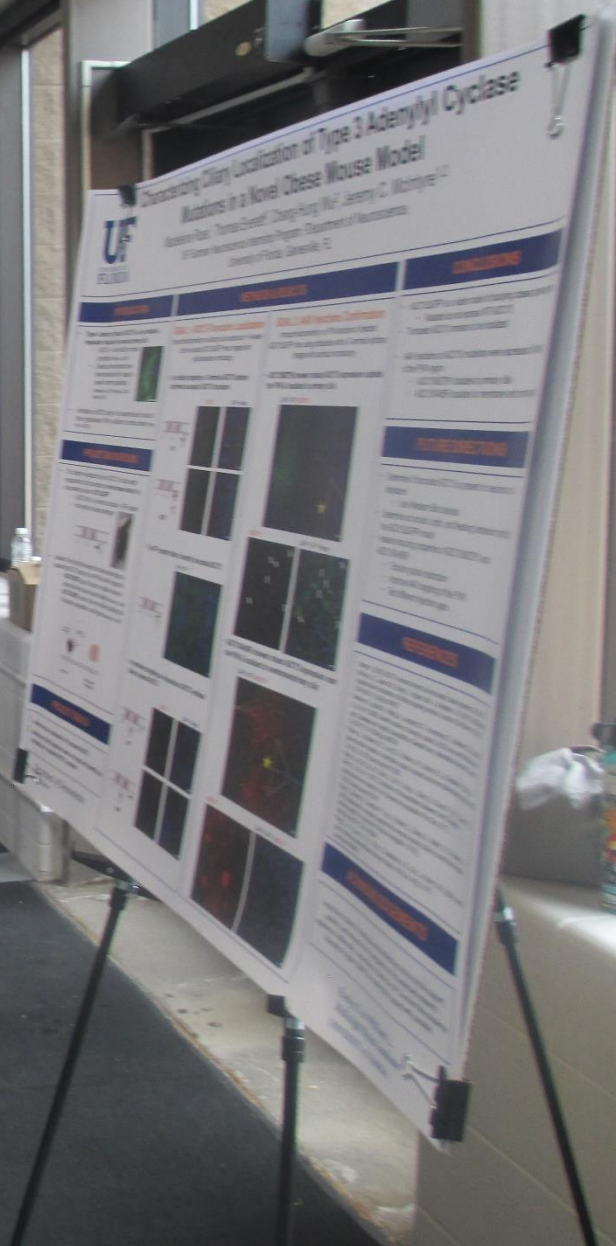
Results

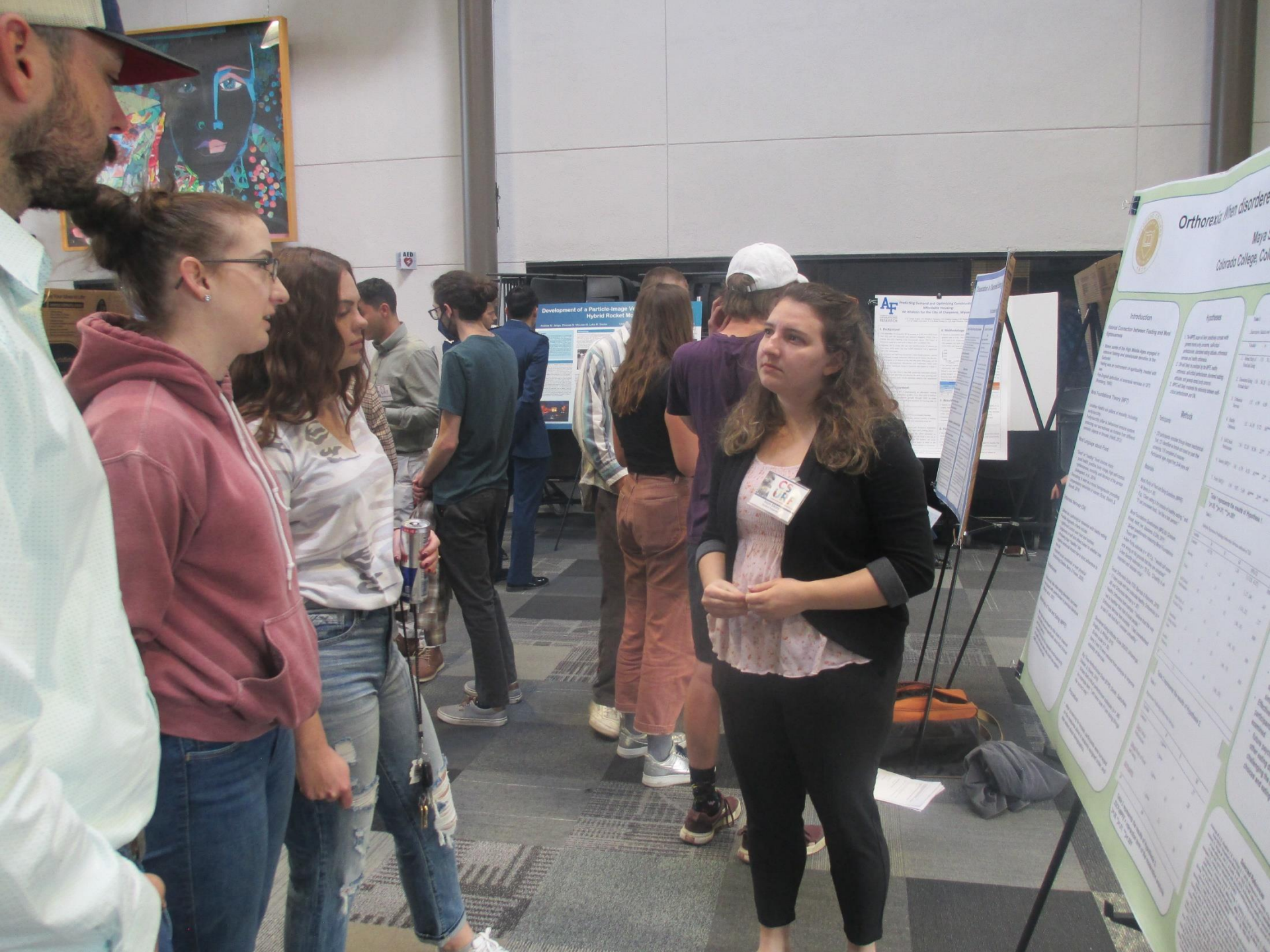
Discussion

References

Acknowledgements







### Orthorexia: When disordered eating becomes a disorder

Maya S. Colorado College, Colorado

**Introduction**

Orthorexia is a condition characterized by an obsessive focus on eating only "healthy" or "clean" foods. This condition can lead to malnutrition, anxiety, and depression. The purpose of this research is to explore the psychological and physiological effects of orthorexia and to identify potential interventions.

**Methods**

The study involved a survey of 100 college students to determine the prevalence of orthorexia. Additionally, a group of 20 participants followed a strict orthorexic diet for two weeks, with their mental health and physical health monitored throughout the period.

**Results**

The survey results indicated that approximately 15% of the participants exhibited signs of orthorexia. The experimental group reported increased anxiety and decreased energy levels during the two-week period, despite their adherence to a "healthy" diet.

**Conclusion**

The findings suggest that orthorexia is a serious condition that can have significant negative impacts on mental and physical health. Further research is needed to understand the underlying causes and to develop effective treatment strategies.

### Development of a Particle-Image Velocimetry Hybrid Rocket Motor

Authors: Dr. John Doe, Dr. Jane Smith, Dr. Alex Lee

**Abstract**

This paper describes the development and testing of a hybrid rocket motor using Particle-Image Velocimetry (PIV) for flow visualization. The motor was designed to provide a controlled and adjustable thrust for experimental purposes. The results show that the motor operated successfully, with PIV providing detailed insights into the combustion chamber flow field.

**Keywords:** Hybrid Rocket Motor, Particle-Image Velocimetry, Flow Visualization, Combustion.

### AF

**Abstract**

This research focuses on the application of Artificial Intelligence (AI) in the field of robotics. The study explores how machine learning algorithms can be used to improve the performance of autonomous robots in dynamic environments. The results demonstrate that AI-based systems can adapt to changing conditions and make more efficient decisions than traditional rule-based systems.

**Keywords:** Artificial Intelligence, Robotics, Machine Learning, Autonomous Systems.



**AF**  
DEVELOPING RESEARCH II

**Predicting Demand and Optimizing Construction of Affordable Housing**  
An Analysis for the City of Worcester, Wyoming

A STUDY FOR THE CITY OF WORCESTER, WYOMING

**1. Background**

**2. Methodology**

**3. Results and Impact**

**4. Future Work**

**Development of a Particle-Image Velocimetry Hybrid Rocket Motors**

James M. Arger, Thomas R. Wilcox, G. Luke M. Kester  
United States Air Force Academy

CS  
URI



**CS**  
**URF**  
Madeline Ross  
Student Researcher



# Characterizing Ciliary Localization of Type 3 Adenylyl Cyclase Mutations in a Novel Obese Mouse Model

Madeline Ross<sup>1</sup>, Thomas Everett<sup>2</sup>, Chang-Hung Wu<sup>2</sup>, Jeannette Ross<sup>2</sup>  
<sup>1</sup>UF Summer Neuroscience Internship Program, <sup>2</sup>Department of Neuroscience  
 University of Florida, Gainesville, FL

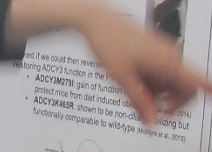
## INTRODUCTION

- Type 3 adenylyl cyclase (ADCY3) is a key metabolic regulator localized to respiratory primary cilia
- ADCY3<sup>-/-</sup> mice exhibit an obese phenotype (Wang et al., 2008)
- Genetic polymorphisms have been associated with obesity in several human populations (Nemser et al., 2007; Wang et al., 2010; Nemser, 2018)
- Inhibition of ADCY3 activity in the paraventricular nucleus of the hypothalamus (PVN) is sufficient to produce obesity (Wang et al., 2007)



## PROJECT BACKGROUND

- To further investigate the role of ADCY3 in body weight regulation, the lab developed a novel mouse model with a truncating mutation: ADCY3ΔGFP
- ADCY3 with a C-terminal truncation + GFP reporter mice exhibit an obese phenotype



## PROJECT GOALS

- determine the localization of truncated ADCY3
- determine if AAV injections were on target and identify the localization of mutated ADCY3 proteins

Department of Neuroscience  
 Gainesville, FL

## METHODS & RESULTS

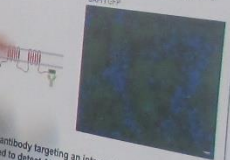
### GOAL 1: ADCY3 Truncation Localization

Immunohistochemistry on olfactory bulb sections of ~14-week-old non-injected ADCY3ΔGFP mice, imaged with epifluorescence microscopy

- An antibody targeting a C-terminal ADCY3 epitope confirmed successful ADCY3 truncation



- The GFP reporter failed to identify truncated ADCY3



- An antibody targeting an intracellular ADCY3 epitope failed to detect ADCY3



### GOAL 2: AAV Injections

Immunohistochemistry on PVN sections of ADCY3ΔGFP mice using antibodies with imaged with confocal microscopy

- ADCY3M279I showed robust ADCY3 the PVN & localized to primary cilia



- ADCY3K465R showed robust ADCY3 expression the PVN & localized to membrane/primary cilia





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Year to 2014	Credited	Market	Value
2000	1000	1000	1000
2001	1000	1000	1000
2002	1000	1000	1000
2003	1000	1000	1000
2004	1000	1000	1000
2005	1000	1000	1000
2006	1000	1000	1000
2007	1000	1000	1000
2008	1000	1000	1000
2009	1000	1000	1000
2010	1000	1000	1000
2011	1000	1000	1000
2012	1000	1000	1000
2013	1000	1000	1000
2014	1000	1000	1000



**AF OPERATIONS RESEARCH**

**Predicting Demand and Optimizing Construction of Affordable Housing: An Analysis for the City of Cheyenne, Wyoming**

1. Background

4. Methodology

**Dissociation in Disordered Eating: Development of a New Scale**

The Colorado College

**Binge Eating & Binge Eating Disorder**

**Binge Eating**

Concerning an individual's loss of control when eating large amounts of food quickly when not hungry and the loss of consciousness.

**Binge Eating Disorder (BED)**

Characterized by recurrent binge eating episodes, accompanied by distress, and not associated with other eating disorders.

**Dissociation**

Dis detachment from the self and the environment, often leading to a sense of unreality or depersonalization.

**Disruptive Disorders**

Disruptive disorders are characterized by significant impairment in social, academic, or occupational functioning.

**Psychological Distress**

Psychological distress is a state of emotional suffering that is caused by a variety of factors, including stress, trauma, and mental health conditions.

**Disordered Eating**

Disordered eating refers to a range of eating behaviors that are not considered normal or healthy.

**Dissociation in Disordered Eating**

Individuals with dissociative symptoms often experience binge eating as a coping mechanism to escape negative emotions.

**Development of a New Scale**

**Purpose of Creating a New Scale**

Increase measurement of specific symptoms associated with dissociation in binge eating.

**Sample of Dissociative Eating Scale (DISEAT)**

Participants rated the frequency of the following items, with 1 = never and 5 = always.

Item	1	2	3	4	5
1. I feel disconnected from my body when I eat.					
2. I feel like I'm watching myself eat.					
3. I feel like I'm not really eating.					
4. I feel like I'm eating to escape my feelings.					
5. I feel like I'm eating to numb my pain.					
6. I feel like I'm eating to forget my problems.					
7. I feel like I'm eating to avoid my feelings.					
8. I feel like I'm eating to escape my thoughts.					
9. I feel like I'm eating to avoid my feelings.					
10. I feel like I'm eating to avoid my feelings.					

AF OPERATIONS RESEARCH

Predicting Demand and Optimizing Construction of Affordable Housing: An Analysis for the City of Cheyenne, Wyoming

1. Background

4. Methodology

CS 306

CS 306



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ATRIUM

# Orthorexia: When disordered eating becomes a moral good

Maya Sikora  
Colorado College, Colorado Springs, CO



## Introduction

**Historical Connection between Eating and Moral Significance**

Members of the High Middle Ages engaged in behaviors being not associated exclusively to the spiritual fasting as an instrument of spirituality, treated with one of the original definitions of anorexia nervosa in 1872 (Sunderling, 1980).

**More Foundations Theory (MFT)**

Another Health is a pillar of morality including (psychological) functionality after a balance immune system, promoting an environment on balance from different related states or trends (Holt, 2012).

**Moral Language about Food**

"Good" or "healthy" food choices imply, in part, both justice body image, high self-esteem, righteousness, morality, and integrity of the person (Chapman et al., 2014).

Overweight is a more stigmatized property (Chapman, 2014).

**Orthorexia Nervosa (ON)**

Search for nutritional elements with healthy eating (Purified diets, clean eating) (Holt, 2012) and search for food and often feel that whether one has the appropriate moral food is also addressed to (Kordecki, 2014; Berg & Farrow, 2016).

**Perfectionism**

Concerned that one eating behavior, has been described as perfectionism's extreme (Berg et al., 2011).

**Moral Purity of Food and Eating (MPFE)**

Food purity is considered to be the healthiest and most ethical (Kordecki, 2014).

**Procedures**

- After seeking of healthy participants were recruited and screened for inclusion criteria based on the research and screening.

## Hypotheses

1. The MPFE scale will likely positively correlate with general moral purity concerns, self-critical perfectionism, disordered eating attitudes, orthorexia nervosa and healthy orthorexia.
2. ON will likely be positively related to the MPFE, healthy orthorexia, self-critical perfectionism, disordered eating attitudes, and general moral purity concerns.
3. MPFE will likely mediate the relationship between self-critical perfectionism and ON.

## Methods

**Participants**

- 273 participants received through Amazon Mechanical Turk. 121 identified as female and 152 as male in total.
- Participants ages ranged from 24-64 years old.

**Measures**

- **Moral Purity of Food and Eating Questionnaire (MPFE)** (Holt, 2012).
- **Self-critical Perfectionism Scale (SCPS)** (Holt, 2012).
- **Orthorexia Nervosa Scale (ONS)** (Holt, 2012).
- **Healthy Orthorexia Scale (HOS)** (Holt, 2012).
- **Moral Foundations Theory (MFT)** (Chapman, 2014).
- **General Moral Purity Scale (GMPS)** (Holt, 2012).

## Results

Table 1  
Descriptive Statistics and Correlations for Study Variables

Variable	M	SD	1	2	3	4	5	6	7
1. Moral Purity of Food and Eating	1.00	78.18	-.01	-.11	.12	.11	.10	.11	.11
2. Disordered Eating Attitudes	1.96	14.25	-.13	1.00	.00	.00	.00	.00	.00
3. Orthorexia Nervosa	1.02	6.98	.48**	.72**	1.00	.00	.00	.00	.00
4. Healthy Orthorexia	1.03	14.19	-.12	-.08**	.11	1.00	.00	.00	.00
5. Self-Critical Perfectionism	1.94	22.28	.13**	.27**	.21**	.18**	1.00	.00	.00
6. Healthy Orthorexia	1.98	6.79	.43	.21**	.22*	.22*	.17	1.00	.00
7. Moral Purity of Food and Eating	1.98	9.02	-.04	-.08**	.03	.03	.07	.07	1.00

Table 1 represents the results of Hypothesis 1.

Multiple Regression Predicting Orthorexia Nervosa	B	SE	β	p
Model	-.03	.03	-.00	.899
Healthy Orthorexia	.24	.02	.24	<.001
Self-critical Perfectionism	.01	.01	.01	.027
General Moral Purity	.01	.01	.01	.001
Disordered Eating Attitudes	.01	.01	.01	.001
Healthy Orthorexia	.01	.01	.01	.001

Table 2 represents the results of Hypothesis 2.

Regression Predicting Orthorexia Nervosa	B	SE	β	p
Model	-.03	.03	-.00	.899
Healthy Orthorexia	.24	.02	.24	<.001
Self-critical Perfectionism	.01	.01	.01	.027
General Moral Purity	.01	.01	.01	.001
Disordered Eating Attitudes	.01	.01	.01	.001
Healthy Orthorexia	.01	.01	.01	.001

Table 3 represents the results of Hypothesis 3.

Regression Predicting Orthorexia Nervosa	B	SE	β	p
Model	-.03	.03	-.00	.899
Healthy Orthorexia	.24	.02	.24	<.001
Self-critical Perfectionism	.01	.01	.01	.027
General Moral Purity	.01	.01	.01	.001
Disordered Eating Attitudes	.01	.01	.01	.001
Healthy Orthorexia	.01	.01	.01	.001

## Discussion

### Moralizing about food as part of

- MPFE items have construct validity associated with closely aligned concepts: orthorexia, disordered eating, and the MFT (H1)
- MPFE, disordered eating, self-critical perfectionism, and MFT Purity are predicted ON scores (H2)
- MPFE moderated the relationship between perfectionism and ON (H3)
- This study confirms the qualitative studies that classified moral components as possible criteria for ON of orthorexia nervosa (Chapman, 2014)
- Participants saw "clean" eating habits and moral goods, even when shown possible implications for someone's life due to strict adherence to the diet (Ambwani, Shippe, et al., 2019).
- Association between ON tendencies and perfectionism was also confirmed in this study (Novara et al., 2019).

### Limitations and Future Directions

- Moralizing components of women's eating habits should be traced back to concerns about the purity of food and eating
- also true in males or is it unique to women?
- MPFE was reliable and positively correlated with the DEAS and Tergel Orthorexia Scale (TOS), indicating construct validity
- MPFE should be tested against other measures to see how robust that validity is or if the items are too similar
- Effectiveness of different psychotherapies on participants who have orthorexic tendencies should be examined
- future psychotherapies for orthorexia, and maybe other eating disorders as well, may need to focus on challenging the moralizing attitudes towards food choices and eating behaviors.

### Selected References

Ambwani, S. S., Shippe, E. G., & Ambwani, S. S. (2019). The Moralizing of Food and Eating: A Qualitative Study of the Moralizing of Food and Eating. *Journal of Health Psychology*, 71, 1-10.

Chapman, J. L. (2014). Moral Foundations Theory and the Moralizing of Food and Eating. *Journal of Health Psychology*, 43, 1-10.

Holt, M. W. (2012). The Moralizing of Food and Eating: A Qualitative Study of the Moralizing of Food and Eating. *Journal of Health Psychology*, 41, 1-10.

Novara, E., & Novara, E. (2019). The Moralizing of Food and Eating: A Qualitative Study of the Moralizing of Food and Eating. *Journal of Health Psychology*, 71, 1-10.

CS URF

Introduction

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Perfectionism

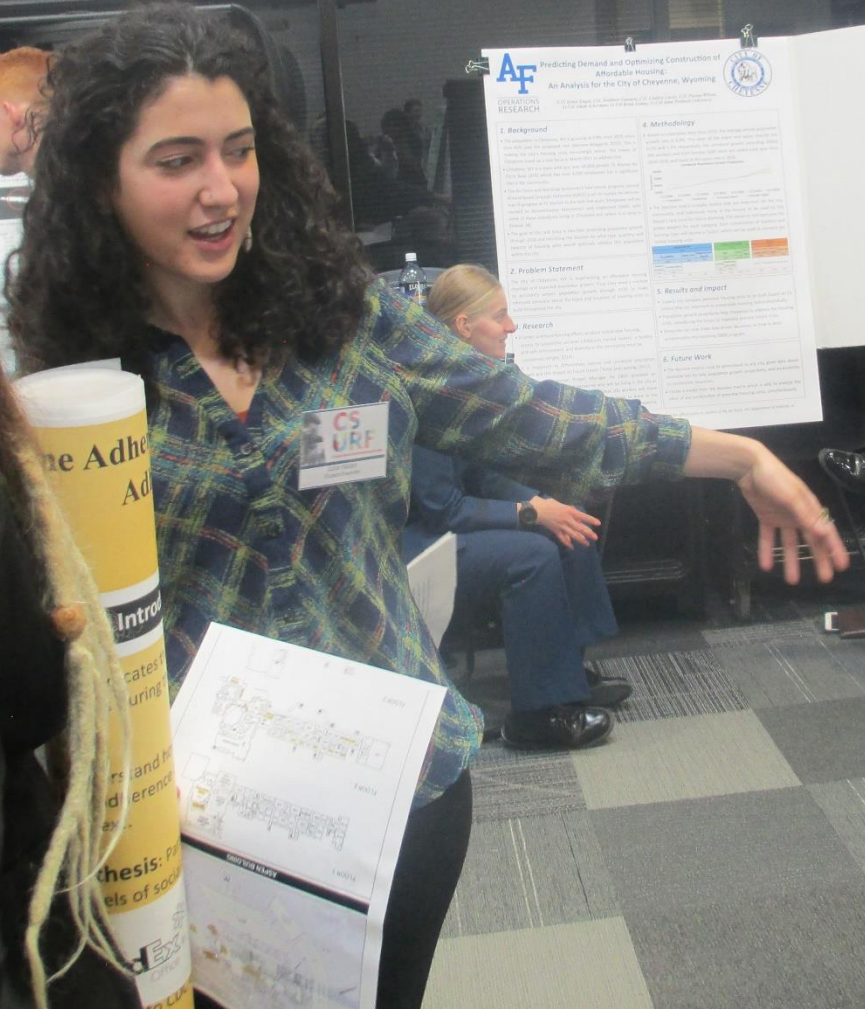
Concerned that one eating behavior, has been described as perfectionism's extreme (Berg et al., 2011).

Moral Purity of Food and Eating (MPFE)

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Procedures

- After seeking of healthy participants were recruited and screened for inclusion criteria based on the research and screening.



### AP RESEARCH

#### Predicting Demand and Optimizing Construction of Affordable Housing: An Analysis for the City of Cheyenne, Wyoming

By: [Name] | Advisor: [Name]

- Background**

The City of Cheyenne is currently in a period of rapid growth. This has led to an increase in the demand for affordable housing. The City is currently in the process of conducting a study to determine the demand for affordable housing and to optimize the construction of affordable housing units in the City of Cheyenne.
- Problem Statement**

The City of Cheyenne is in need of affordable housing units. The current supply of affordable housing units is insufficient to meet the demand. The City is currently in the process of conducting a study to determine the demand for affordable housing and to optimize the construction of affordable housing units in the City of Cheyenne.
- Methodology**

The study was conducted using a combination of primary and secondary data. Primary data was collected through a survey of residents in the City of Cheyenne. Secondary data was collected through a review of existing literature on affordable housing and the City of Cheyenne's current housing market.
- Results and Impact**

The study found that there is a significant demand for affordable housing units in the City of Cheyenne. The study also found that the current supply of affordable housing units is insufficient to meet the demand. The study's findings will be used by the City of Cheyenne to optimize the construction of affordable housing units in the City of Cheyenne.
- Future Work**

The study's findings will be used by the City of Cheyenne to optimize the construction of affordable housing units in the City of Cheyenne. Future work will include a continued monitoring of the demand for affordable housing units in the City of Cheyenne.

## Dissociation in Disordered Eating: Development of a New Scale

Julia Nolan  
The Colorado College, Colorado Springs

### Binge Eating & Binge Eating Disorder

**Binge Eating**  
Consuming larger quantities of food quickly, when not hungry, and in the absence of any compensatory behavior. Binge eating is characterized by eating large amounts of food in a short period of time, often to the point of discomfort. Binge eating is often associated with feelings of shame, guilt, and loss of control.

**Binge Eating Disorder (BED)**  
A recurrent binge eating disorder characterized by recurrent binge eating episodes. Binge eating is characterized by eating large amounts of food in a short period of time, often to the point of discomfort. Binge eating is often associated with feelings of shame, guilt, and loss of control.

### Dissociation

Dis detachment from the here and now. Dissociation can range from feeling spaced out to profound depersonalization.

- Can become dissociated from past, interfere with learning, and does not reflect against physical threat.

### Dis dissociative Disorders

Dis dissociative pathologies involve disruptions or disruptions in the integration of consciousness, memory, emotions, identity, perception, and behavior.

**Psychological Dissociation**  
Dis dissociation in cognitive and/or emotional processing.

**Somatiform Dissociation**  
Dis dissociation in physiological, kinesthetic, or motor sensory.

### Dissociation in Disordered Eating

Individuals with BED experience higher dissociative symptoms than individuals with DSM-5 BED. Dissociative symptoms from dissociation that are associated with binge eating are associated with higher levels of dissociation.

**Theoretical Frameworks & Models**  
Dis dissociation is a complex phenomenon that can be understood through a variety of theoretical frameworks and models. One of the most prominent models is the dissociation model of dissociation, which posits that dissociation is a result of a failure of the mind to integrate information from the external world.

**Dis dissociation vs. Trait Dissociation in BED**  
Dis dissociation is a state that occurs in response to a specific trigger, while trait dissociation is a stable characteristic of an individual. In the context of BED, dissociation is often experienced during binge eating episodes.

**Dis dissociation and the development of a new scale**  
Dis dissociation is a complex phenomenon that can be understood through a variety of theoretical frameworks and models. One of the most prominent models is the dissociation model of dissociation, which posits that dissociation is a result of a failure of the mind to integrate information from the external world.

### Survey & Scale

#### Properties of the DISS-EAT

- Good reliability,  $\alpha = .88$ .
- Good construct validity.
- High correlations between DISS-EAT, BED, and LOCES.
- Multiple regression shows 60% of the variance in DISS-EAT scores was accounted for by the predictors (DISS-EAT, BED, and LOCES),  $p < .001$ ,  $R^2 = .61$ . LOCES is the best predictor of DISS-EAT, followed by BED.

#### Eating Disorder Diagnosis

- Those with an ED diagnosis had significantly higher DISS-EAT scores than those not diagnosed with an ED. (Diag.  $M=3.94$ ,  $SD=0.71$ ; Not diag.  $M=2.81$ ,  $SD=0.61$ ).

#### Difference Between Eating Disorder Diagnosis and DISS-EAT Mean

#### Psychological vs. Somatiform Dissociation

Dis dissociative eating (DISS-EAT) was found to be significantly more strongly predicted by a measure of somatiform dissociation (SDQ) rather than cognitive dissociation (CES-D).

Multiple regressions of CES-D and SDQ predicting DISS-EAT:

	B	SE	B	t	p
DISS-EAT	2.81	0.15			
SDQ	.02	.01	.024	19.34	<.001
BED	.02	.01	.023	3.02	.003
R <sup>2</sup>	.27		.514		

#### Discussion

Current results indicate that dissociative eating is more strongly predicted by a measure of somatiform dissociation (SDQ) rather than cognitive dissociation (CES-D).



## Characterizing Ciliary Localization of Type 3 Adenylyl Cyclase Mutations in a Novel Obese Mouse Model

Madeleine Ross<sup>1</sup>, Thomas Everett<sup>2</sup>, Chang-Hung Wu<sup>2</sup>, Jeremy C. McIntyre<sup>1,2</sup>  
<sup>1</sup>UF Summer Neuroscience Internship Program, <sup>2</sup>Department of Neuroscience,  
 University of Florida, Gainesville, FL

### INTRODUCTION

Type 3 adenylyl cyclase (ADCY3) is a key metabolic regulator localized to mammalian primary cilia. ADCY3 cilia exhibit an obese phenotype (Ross et al., 2019). Specific ciliary proteins have been associated with obesity in several human populations (Wassenaar et al., 2017; Wang et al., 2018; Wassenaar, 2019).

Interruption of ADCY3 activity in the para-ventral nuclei of the hypothalamus (PVN) is sufficient to produce obesity (Wang, 2019).

### METHODS & RESULTS

#### GOAL 1: ADCY3 Truncation Localization

Levels of endogenous primary cilia levels of WT and all conserved ADCY3 GFP mice, injected with subcutaneous leptin.

- An antibody targeting a C-terminal ADCY3 epitope confirmed successful ADCY3 truncation.

#### GOAL 2: AAV Injections Confirmation

Intracerebroventricularly in PVN neurons of truncated ADCY3 GFP mice using AAV9 vectors with a C-terminal epitope, injected with subcutaneous leptin.

- ADCY3 GFP showed robust ADCY3 expression outside the PVN & localized to primary cilia.

### CONCLUSIONS

- ADCY3 GFP is a viable means of studying ciliary protein expression. Truncated ADCY3 remains to be localized.
- AAV9 injection of ADCY3 truncation does not suppress cell output of the PVN neuron.
- ADCY3 GFP is capable of primary cilia.
- ADCY3 GFP localized to membrane and primary cilia.

### FUTURE DIRECTIONS

- Characterize if truncated ADCY3 is present in localized or IP regulated.
- Use mouse models that express.
- Determine the metabolic, health, and feeding behavior profiles for the ADCY3 GFP mice.
- Identify feeding programs at ADCY3 GFP and ADCY3 GFP.
- Control gene expression.
- Control gene expression of the PVN.
- Identify other metabolic genes.

### REFERENCES

Wassenaar, M. M., et al. (2017). Cilia-associated protein levels in the hypothalamus predict body weight gain in mice. *Journal of Lipid Research*, 58(12), 2303-2312.

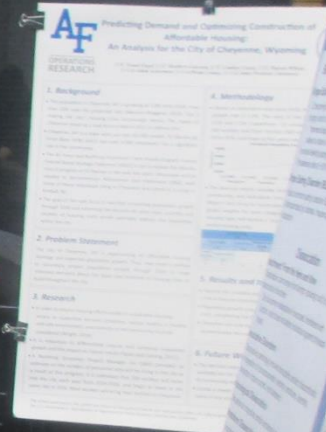
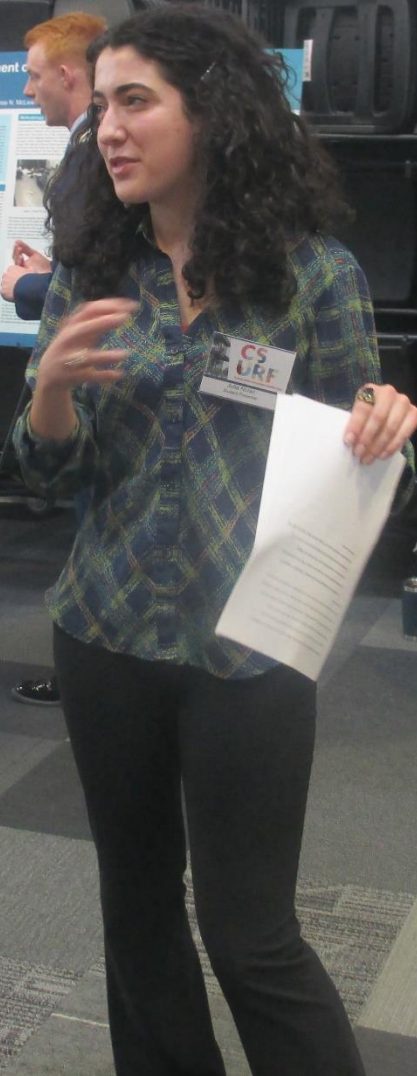
Wang, C. H., et al. (2019). Disruption of Type 3 Adenylyl Cyclase in the Paraventricular Nucleus of the Hypothalamus Causes Obesity in Mice. *Journal of Neuroscience*, 39(18), 3503-3512.

Ross, M., et al. (2019). Cilia-associated protein levels in the hypothalamus predict body weight gain in mice. *Journal of Lipid Research*, 60(12), 2303-2312.

Wassenaar, M. M., et al. (2019). Cilia-associated protein levels in the hypothalamus predict body weight gain in mice. *Journal of Lipid Research*, 60(12), 2303-2312.

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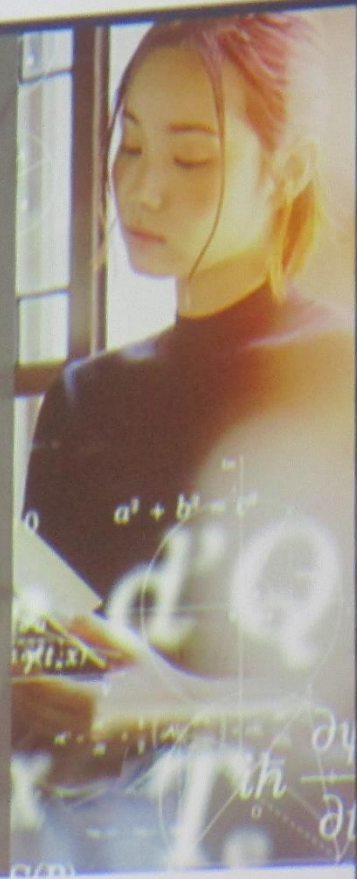






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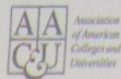
# High-Impact Educational Practices



WHAT THEY ARE,  
WHO HAS ACCESS TO THEM,  
AND WHY THEY MATTER

BY GEORGE D. KUH

WITH AN INTRODUCTION BY CAROL GEARY SCHNEIDER  
AND FINDINGS ON STUDENT SUCCESS FROM AAC&U'S  
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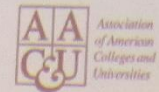


# Ensuring Quality & Taking High-Impact Practices to Scale



BY GEORGE D. KUH AND KEN O'DONNELL

WITH CASE STUDIES BY SALLY REED



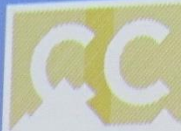
# Delivering on the Promise of High-Impact Practices

Research and Models for Achieving  
Equity, Fidelity, Impact, and Scale

Edited by  
John Zilvinskis, Jillian Kinzie,  
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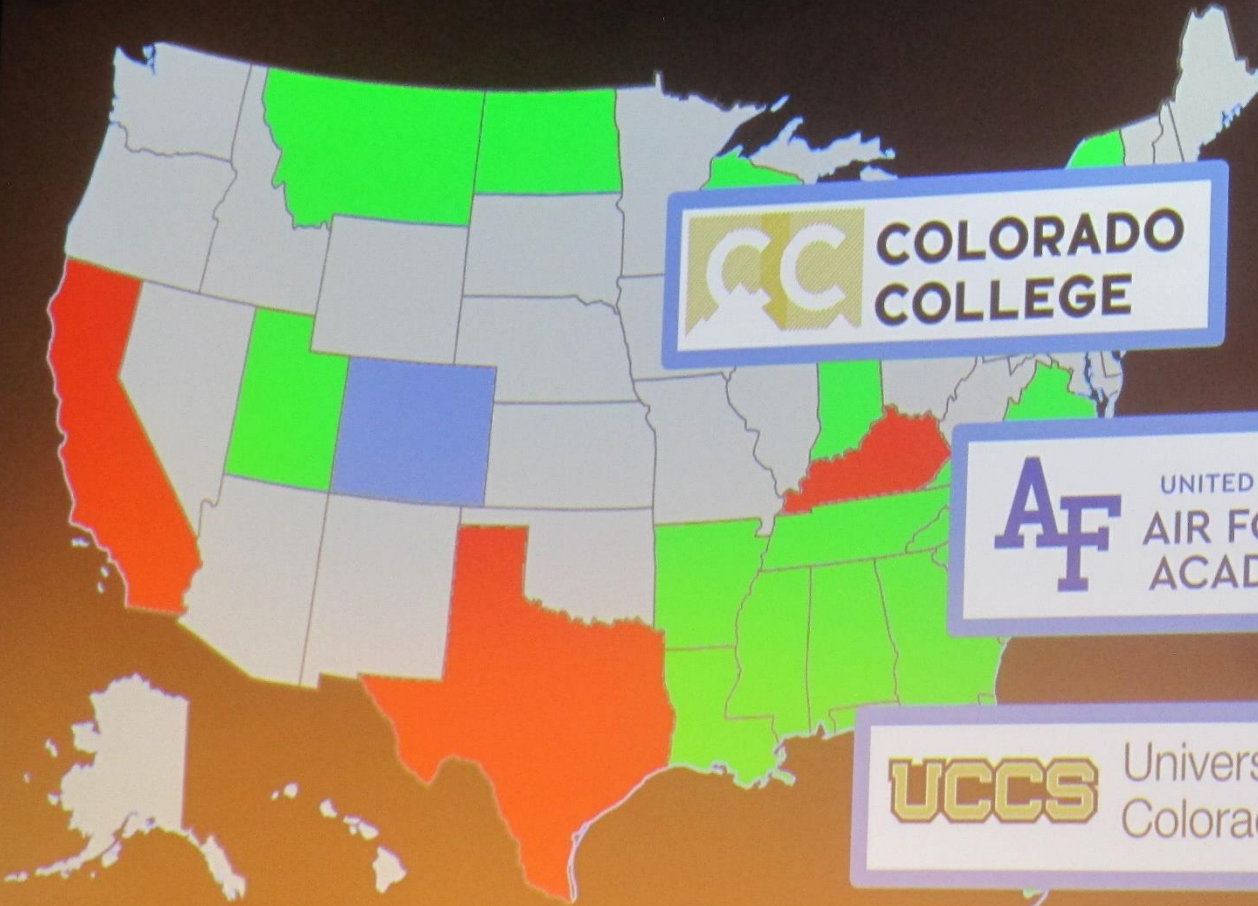
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