

CURRICULUM VITAE

Date prepared: November 27, 2023

NAME: Nicholas C. Jacobson

OFFICE ADDRESS:

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I. EDUCATION

<u>DATE</u>	<u>INSTITUTION</u>	<u>DEGREE</u>
2015-2019	The Pennsylvania State University University Park, Pennsylvania	Ph.D., Clinical Psychology Received: Summer 2019
2011-2015	The Pennsylvania State University University Park, Pennsylvania	Master of Science, Psychology
2007-2011	Truman State University, Kirksville, Missouri	Bachelor of Science, Psychology Minors: Statistical Methods, English, and Justice Systems Received: Spring 2011

Cumulative Undergraduate G.P.A.:3.91 (4.0=A), Summa Cum Laude

II. FELLOWSHIPS AND POSTDOCTORAL TRAINING

<u>DATE</u>	<u>INSTITUTION</u>	<u>ROLE</u>
2019	Massachusetts General Hospital, Harvard Medical School Boston, Massachusetts	Postdoctoral Fellow, Psychiatry
2018-2019	Massachusetts General Hospital, Harvard Medical School Boston, Massachusetts	Clinical Fellow, Psychiatry

III. ACADEMIC APPOINTMENTS:

<u>DATE</u>	<u>INSTITUTION</u>	<u>ROLE</u>
2019-Present	Dartmouth College Geisel School of Medicine Hanover, New Hampshire	Assistant Professor, Department of Biomedical Data Science (Primary)
2019-Present	Dartmouth College Geisel School of Medicine Hanover, New Hampshire	Assistant Professor, Department of Psychiatry (Secondary)
2019-Present	Dartmouth College Geisel School of Medicine Hanover, New Hampshire	Participating Faculty, Quantitative Biomedical Sciences Graduate Program
2021-Present	Dartmouth College Arts and Sciences Hanover, New Hampshire	Adjunct Assistant Professor, Computer Science (Tertiary)

IV. DARTMOUTH INSTITUTIONAL LEADERSHIP ROLES

<u>DATE</u>	<u>INSTITUTION</u>	<u>ROLE</u>
July 2021- Present	Dartmouth College Geisel School of Medicine Hanover, New Hampshire	Deputy Director, Treatment Development and Evaluation Core, Center for Technology and Behavioral Health (National Institute of Drug Abuse, Center of Excellence P30)

V. LICENSURE AND CERTIFICATION

N/A

VI. HOSPITAL OR HEALTH SYSTEM APPOINTMENTS

<u>DATE</u>	<u>INSTITUTION</u>	<u>ROLE</u>
3/2020- Present	Massachusetts General Hospital Obsessive-Compulsive and Related Disorders Program (OCD) Department of Psychiatry Boston, Massachusetts	Consultant - Non-Clinical
8/2019- Present	Massachusetts General Hospital Obsessive-Compulsive and Related Disorders Program (OCD) Department of Psychiatry Boston, Massachusetts	Non-Employee

VII. OTHER PROFESSIONAL POSITIONS (NON-DARTMOUTH):

<u>DATE</u>	<u>INSTITUTION</u>	<u>ROLE</u>
12/2013-11/2016	Clinical Research Methods and Statistics Special Interest Group (SIG) Association for Behavioral and Cognitive Therapy (ABCT)	President
8/2009 - 5/2011	Psi Chi, The International Honor Society in Psychology Truman State University	President

VIII. PROFESSIONAL DEVELOPMENT ACTIVITIES

CLINICAL TRAINING AND EXPERIENCE

<u>DATE</u>	<u>INSTITUTION</u>	<u>ROLE</u>
7/2018-6/2019	Massachusetts General Hospital, Harvard Medical School Boston, Massachusetts	Cognitive-Behavioral Therapy, Adult Outpatient Psychotherapy
Supervisors: Drs. Angela Fang, Ann Chosak, Jessica Rasmussen, Jeanne Fama, Susan Sprich, Sabine Wilhelm		
<ul style="list-style-type: none">• Conducted clinical intakes with a range of presenting problems• Treated clients with a range of presenting problems including anxiety, depression, eating, and obsessive-compulsive disorders using cognitive-behavioral therapy.		
1/2019-6/2019	Massachusetts General Hospital, Harvard Medical School Boston, Massachusetts	Dialectical Behavior Therapy Group, Adult Outpatient Psychotherapy
Supervisors: Drs. Michelle Jacobo, Jonah Cohen		
<ul style="list-style-type: none">• Reviewed patient progress in team rounds.• Lead group therapy mindfulness exercises and co-lead skills modules.		
7/2018-12/2018	Massachusetts General Hospital, Harvard Medical School Boston, Massachusetts	Inpatient Psychiatry Service
Supervisor: Dr. Michelle B. Stein		
<ul style="list-style-type: none">• Attended and participated in team-rounds on a weekly basis, contributing to the assessment, case conceptualization, and treatment planning of inpatient clients.• Conducted brief individual psychotherapy and co-led brief skills-based psychotherapy with inpatient clients on a weekly basis.		
5/2017-6/2018	The Pennsylvania State University Psychology Clinic, University Park, Pennsylvania	Clinical Supervisor
Supervisor: Dr. Sandy Testa		
<ul style="list-style-type: none">• Supervised three therapists individually seeing clients with principal diagnoses of anxiety and depressive disorders.• Reviewed videotapes of psychotherapy sessions, aiding in the case conceptualization and clinical intervention of clients.		

and academic accommodation status (e.g. attention-deficit hyperactivity disorder, dyslexia, and traumatic brain injuries).

5/2013-5/2014 The Pennsylvania State University Cognitive-Behavioral Therapy
Psychology Clinic, Practicum
University Park, Pennsylvania

Supervisor: Dr. Michelle G. Newman

- Participated in three-hour weekly meetings and one-hour individual supervision, which focused on cognitive-behavioral assessment and psychotherapy techniques, including: self-monitoring, hierarchy construction, progressive muscle relaxation, self-control desensitization, interoceptive exposure, prolonged exposure, behavioral activation, activity planning, cognitive restructuring, and culturally adapted psychotherapy.
- Conducted monthly case presentations regarding ongoing clients within group supervision.
- Conducted monthly diagnostic assessments.
- Maintained a three client caseload of clients meeting diagnostic criteria for a range of mood, anxiety, posttraumatic stress, and personality disorders.

5/2013-8/2013 The Pennsylvania State University Integrative Psychotherapy
Psychology Clinic, Practicum
University Park, Pennsylvania

Supervisor: Dr. Jeff Hayes

- Participated in three-hour weekly meetings and one-hour individual supervision, which focused on integrative psychotherapy spanning feminist, interpersonal, cognitive-behavioral, and psychodynamic frameworks.
- Conducted monthly diagnostic assessments.
- Maintained a three client caseload of clients meeting diagnostic criteria for a range of personality disorders and mood disorders.

8/2012-5/2013 The Pennsylvania State University Contemporary
Psychology Clinic, Psychodynamic
University Park, Pennsylvania Psychotherapy Practicum

Supervisor: Dr. Aaron Pincus

- Participated in three-hour weekly meetings and one-hour individual supervision, which focused on contemporary psychodynamic diagnosis, case formulation, and psychotherapy within object-relations (Transference-Focused Psychotherapy) and interpersonal frameworks.
- Conducted a case presentation of a client with narcissistic personality disorder.
- Conducted monthly diagnostic assessments.
- Maintained a three client caseload of clients meeting diagnostic criteria for a range of personality disorders and other comorbid conditions.

5/2012-8/2012 The Pennsylvania State University Introductory Clinical Methods
Psychology Clinic, Practicum
University Park, Pennsylvania

Supervisor: Dr. Michael Wolff

- Participated in two-hour weekly meetings and one-hour individual supervision, which stressed humanistic treatment techniques, utilizing empathic responses, and motivational interviewing.
- Conducted monthly diagnostic assessments.
- Maintained a two client caseload of mood and personality disorders.

Spring 2018						
Fall 2016; Spring 2017	Pennsylvania State University	PSYCH 238: Introduction to Personality Psychology	Instructor	Two times per week	100 students	
Summer 2016	Pennsylvania State University	PSYCH 301W: Basic Research Methods in Psychology	Instructor	Online	20 students	
Fall 2015	Penn State Altoona	PSYCH 270: Intro to Abnormal Psychology	Invited Lecturer	One invited lecture	25 students	
Fall 2015	Penn State Altoona	PSYCH 470 Advanced Abnormal Psychology	Invited Lecturer	One invited lecture	25 students	
Fall 2015; Spring 2016	Pennsylvania State University	PSYCH 423: Social Psychology of Interpersonal/Intergroup Relationships	Teaching Assistant	Twice per week	30 students	
Fall 2014; Spring 2015	Pennsylvania State University	PSYCH 477 Mental Health Practicum with Children	Teaching Assistant	Twice per week	20 students	
Fall 2013; Spring 2014	Pennsylvania State University	PSYCH 301W: Basic Research Methods in Psychology	Lab Instructor	Twice per week	100 students	
Spring 2013	Pennsylvania State University	PSYCH 238 Introduction to Personality Psychology	Teaching Assistant	Twice per week	100 students	
Fall 2012	Pennsylvania State University	PSYCH 105: Psychology as a Science and Profession	Teaching Assistant	Twice per week	200 students	
Winter 2008; Winter 2009; Winter 2010	Truman State University	PSYC 499 Hypnosis	Teaching Assistant	Daily	20 students	
Winter 2008;	Truman State University	PSYC 499 Psychology of Mass Media	Teaching Assistant	Daily	20 students	

Winter
2009;
Winter
2010

B. GRADUATE EDUCATION:

<u>DATES</u>	<u>INSTITUTION</u>	<u>NAME OF COURSE/ACTIVITY</u>	<u>ROLE</u>	<u>FREQUENCY</u>	<u>COURSE SIZE</u>
Spring 2023; Fall 2021; Fall 2020	Dartmouth College	QBS 126: Analysis of Densely Collected Longitudinal Data	Instructor	Twice per week	10 students (Fall 2020); 1 student (Fall 2021); 23 students (Spring 2023)
Spring 2020; Spring 2021; Spring 2022; Spring 2023	Dartmouth College	QBS 270: Quantitative Biomedical Sciences Journal Club	Instructor (1 of 2)	Once per week	10-20 students
Spring 2020	Dartmouth College	QBS 177: Algorithms in Biomedical Data Science.	Invited Lecturer	One invited lecture	20 students

X. PRIMARY RESEARCH ADVISING

A. GRADUATE STUDENTS:

<u>DATES</u>	<u>INSTITUTION</u>	<u>ADVISEE/MENTEE</u>	<u>PROGRAM</u>
Winter 2020 – Current	Dartmouth College	Damien Lekkas	PhD Advisee; PhD Program in Quantitative Biomedical Sciences
Spring 2020 – Current	Dartmouth College	George Price	PhD Advisee; PhD Program in Quantitative Biomedical Sciences
Fall 2022 – Current	Dartmouth College	Sukriti Ghosh	Research Advising, MS Program in Quantitative Biomedical Sciences
Summer 2022 – Current	Dartmouth Health	Amanda Collins	PhD Candidate, Predoctoral Psychology Internship Program

Fall 2022 – Current	Dartmouth College	Yinzhou (“Joe”) Wang	Research Advising, MS Program in Quantitative Biomedical Sciences
Fall 2022 – Current	Dartmouth College	Joseph Gyorda	Research Advising, MS Program in Quantitative Biomedical Sciences
Fall 2022 – Current	Dartmouth College	Samuel Morton	Thesis Advisor, MS Program in Computer Science
Fall 2019 – Spring 2023	Dartmouth College	Matthew Nemesure	PhD Advisee; PhD Program in Quantitative Biomedical Sciences
Fall 2022; Spring 2023-- Current	Dartmouth College	Hannah Dorris	Rotation; PhD Program in Quantitative Biomedical Sciences
Summer 2022 – Current	ETH Zurich	Teepe Gisbert Wilhelm	Co-Advisee; PhD Program in Digital Health
Spring 2022	Dartmouth College	Bruno Scodari	Rotation; PhD Program in Quantitative Biomedical Sciences
Spring 2022	Dartmouth College	Zhiyun Gong	Rotation; PhD Program in Quantitative Biomedical Sciences
Fall 2020 – Spring 2021	Dartmouth College	Yong Zhao	Research Advising, MS Program in Quantitative Biomedical Sciences
Fall 2020	Dartmouth College	Yuting Wang	Rotation; PhD Program in Quantitative Biomedical Sciences
Fall 2019 – Winter 2020	Dartmouth College	Lili Liu	Capstone Advisor; MS Program in Quantitative Biomedical Sciences
Fall 2019 – Winter 2020	Dartmouth College	Jason Kim	Capstone Advisor; MS Program in Quantitative Biomedical Sciences
Fall 2019	Dartmouth College	Shuai Jiang	Rotation; PhD Program in Quantitative Biomedical Sciences

B. POSTDOCTORAL FELLOWS AND RESIDENTS

DATES INSTITUTION ADVISEE/MENTEE PROGRAM

Summer 2023 – Current	Dartmouth College	Amanda Collins	Postdoctoral Fellow
Summer 2023 – Current	Dartmouth College	Daniel Mackin	Postdoctoral Fellow
Fall 2022 – Current	Cambridge Health Alliance	Meredith Gansner	K23, National Institute on Drug Abuse
Summer 2021 – Current	University of Pittsburgh	Colin Vize	K01, National Institute of Mental Health
Fall 2019 – Current	Dartmouth College; Dartmouth Hitchcock Medical Center	Michael Heinz	Postdoctoral Fellow (Dartmouth College); Psychiatry Resident; (Dartmouth Hitchcock Medical Center)
Summer 2021 – Current	Dartmouth Hitchcock Medical Center	Arnav Pondicherry	Psychiatry Resident
Winter 2022 – Summer 2022	Dartmouth College	Felix Kortmann	Postdoctoral Fellow; Deutsche Akademische Austauschdienst (DAAD) Fellowship Program
Fall 2020 – Winter 2022	Dartmouth College	Robert Klein	Postdoctoral Fellow; National Institute of Drug Abuse T32

XI. ADVISING/MENTORING (OTHER)

A. UNDERGRADUATE STUDENTS:

<u>DATES</u>	<u>INSTITUTION</u>	<u>ADVISEE/MENTEE</u>	<u>PROGRAM</u>
Fall 2023	Dartmouth College	Andy Xu	Undergraduate Research Assistantship at Dartmouth (URAD)
Summer 2023	Dartmouth College	Sofia P. Jayaswal	Undergraduate Research Assistantship at Dartmouth (URAD)
Summer 2023	Dartmouth College	Alexander Ye	Presidential Scholar
Summer 2023	Dartmouth College	Eda Naz Gokdemir	Presidential Scholar
Summer 2023; Fall 2023	Dartmouth College	Jenny Oh	Presidential Scholar

Spring 2023	Dartmouth College	Janelle Annor	Undergraduate Research Assistantship at Dartmouth (URAD); Undergraduate Research Assistantship at Dartmouth (URAD) Leave Term, Kaminsky Family Fund Award
Spring 2023	Dartmouth College	Jonathan Cartwright	Undergraduate Research Assistantship at Dartmouth (URAD)
Spring 2023	Dartmouth College	Boseong Kim	Undergraduate Research Assistantship at Dartmouth (URAD)
Spring 2023	Dartmouth College	Chaehyun Lee	Undergraduate Research Assistantship at Dartmouth (URAD)
Spring 2023	Dartmouth College	Anna Jean	Undergraduate Research Assistantship at Dartmouth (URAD)
Winter 2023; Spring 2023	Dartmouth College	Victor Moreno	Undergraduate Research Assistantship at Dartmouth (URAD)
Winter 2023	Dartmouth College	Aneesh Patnaik	Undergraduate Research Assistantship at Dartmouth (URAD)
Winter 2023; Spring 2023	Dartmouth College	Daniel Amoateng	Undergraduate Research Assistantship at Dartmouth (URAD)
Fall 2022; Winter 2023; Spring 2023; Fall 2023	Dartmouth College	Abigail Salzhauer	Undergraduate Research Assistantship at Dartmouth (URAD)
Fall 2021; Fall 2022	Dartmouth College	Chloe Park	Undergraduate Research Assistantship at Dartmouth (URAD)
Summer 2022; Fall 2022; Winter 2023; Spring 2023	Dartmouth College	Jessica Meikle	Undergraduate Research Assistantship at Dartmouth (URAD)
Summer 2022; Fall 2022	Dartmouth College	Sukanya Bhattacharya	Presidential Scholar; Undergraduate Research Assistantship at Dartmouth (URAD) Leave Term, Mark C. Hansen Undergraduate Research, Scholarship, and Creativity Fund Presidential Scholar
Summer 2022; Fall 2022	Dartmouth College	Franklin Ruan	Presidential Scholar
Summer 2022	Dartmouth College	Rachel Zhang	Undergraduate Research Assistantship at Dartmouth (URAD); Undergraduate Research Assistantship at Dartmouth (URAD) Leave Term, Kaminsky Family Fund Award
Summer 2022	Dartmouth College	Isabel Hillman	Undergraduate Research Assistantship at Dartmouth (URAD)
Spring 2022; Winter 2023;	Dartmouth College	Anastasia Bryan	Undergraduate Research Assistantship at Dartmouth

Spring 2023; Summer 2023; Fall 2023			(URAD); Undergraduate Research Assistantship at Dartmouth (URAD) Leave Term, Kaminsky Family Fund Award
Spring 2022	Dartmouth College	Nitya Agarwala	Undergraduate Research Assistantship at Dartmouth (URAD)
Spring 2022; Spring 2023; Summer 2023; Fall 2023	Dartmouth College	Brianna Trudeau	Undergraduate Research Assistantship at Dartmouth (URAD)
Spring 2022; Summer 2022; Winter 2023; Spring 2023	Dartmouth College	Caroline Hall	Undergraduate Research Assistantship at Dartmouth (URAD); Presidential Scholarship
Fall 2021	Dartmouth College	Ryan Wu	Undergraduate Research Assistantship at Dartmouth (URAD)
Summer 2021; Fall 2021	Dartmouth College	Elizabeth Crocker	Undergraduate Research Assistantship at Dartmouth (URAD); Presidential Scholar
Fall 2021; Winter 2022	Dartmouth College	Sarah Chacko	Presidential Scholar
Spring 2022; Winter 2021; Spring 2021; Spring 2020	Dartmouth College	Veronica Abreu	Undergraduate Advising and Research (UGAR); Sophomore Research Scholarship, First Term; Second Term
Spring 2021	Dartmouth College	Jimena Abejon Fuentres	Undergraduate Advising and Research (UGAR); Junior Research Scholarship, First Term
Spring 2021	Dartmouth College	Russell Rapaport	Undergraduate Advising and Research (UGAR); Junior Research Scholarship, Second Term
Summer 2020; Spring 2021	Dartmouth College	Chaeun Song	Undergraduate Advising and Research (UGAR); Sophomore Research Scholarship, First Term; Second Term
Fall 2020; Spring 2021	Dartmouth College	Joseph Gyorda	Thesis Advisor; Undergraduate Advising and Research (UGAR); Junior Research Scholarship, First Term; Third Term
Fall 2020; Spring 2021	Dartmouth College	John Keane	Undergraduate Advising and Research (UGAR); Junior Research Scholarship, Third Term

Spring 2021; Fall 2021	Dartmouth College	Piper Stacey	Thesis Advisor; Undergraduate Advising and Research (UGAR); Sophomore Research Scholarship, Second Term; Undergraduate Research Assistantship at Dartmouth (URAD)
Spring 2021; Fall 2021	Dartmouth College	Camilla Lee	Undergraduate Advising and Research (UGAR); Junior Research Scholarship, First Term; Undergraduate Research Assistantship at Dartmouth
Fall 2020; Spring 2021	Dartmouth College	Nhi Nguyen	Undergraduate Advising and Research (UGAR); Sophomore Research Scholarship, First Term; Third Term; Presidential Scholars
Fall 2020	Dartmouth College	Zoe Wortzman	Undergraduate Advising and Research (UGAR); Junior Research Scholarship, Second Term
Fall 2020; Summer 2020	Dartmouth College	Jason McFadden	Undergraduate Advising and Research (UGAR); Presidential Scholarship, First Term; Second Term
Fall 2020	Dartmouth College	Emily Appenzeller	Undergraduate Advising and Research (UGAR); Junior Research Scholarship, First Term
Fall 2020; Winter 2020	Dartmouth College	William Chen	Undergraduate Advising and Research (UGAR); Junior Research Scholarship, First Term; Leave Term Scholarship
Summer 2020; Fall 2020	Dartmouth College	Thomas Lingard	Undergraduate Advising and Research (UGAR); Junior Research Scholarship, First Term; Second Term
Summer 2020	Dartmouth College	Nina Paripovic	Undergraduate Advising and Research (UGAR); Junior Research Scholarship, First Term
Spring 2020	Dartmouth College	Henry Jin	Undergraduate Advising and Research (UGAR) Scholarship

Winter 2020; Spring 2020	Dartmouth College	Raphael Huang	Undergraduate Advising and Research (UGAR); Junior Research Scholarship, First Term
Winter 2020; Spring 2020	Dartmouth College	Alexandra Limb	Undergraduate Advising and Research (UGAR); Junior Research Scholarship, First Term, Second Term
Spring 2020; Winter 2020	Dartmouth College	Mia Seiner	Undergraduate Advising and Research (UGAR); Sophomore Research Scholarship, Second Term
Winter 2020	Dartmouth College	Colin Goodbred	Undergraduate Advising and Research (UGAR); Leave Term Grant
Spring 2019; Winter 2020; Spring 2020	Dartmouth College	Minkeun Song	Undergraduate Advising and Research (UGAR); Junior Research Scholarship, First Term; Second Term; Third Term

B. GRADUATE STUDENTS:

<u>DATES</u>	<u>INSTITUTION</u>	<u>ADVISEE/MENTEE</u>	<u>PROGRAM</u>
Summer 2022 – Fall 2022	Boston University	Tairmae Kangarloo	Qualification Committee, Behavioral Neuroscience
Fall 2019 – Spring 2021	Dartmouth College	Alex daSilva	PhD Dissertation Committee; Psychology and Brain Sciences
Fall 2019- Spring 2021	Dartmouth College	Curtis Peterson	PhD Dissertation Committee; The Dartmouth Institute
Fall 2019- Current	Dartmouth College	Tiankang Xie	Qualification Committee and Dissertation Committee; Quantitative Biomedical Sciences

XII. RESEARCH ACTIVITIES (REVERSE CHRONOLOGICAL ORDER)

A1. SPONSORED ACTIVITY (GRANTS AND CONTRACTS) WITH SIGNIFICANT CONTRIBUTION TO CRAFTING AND WRITING OF PROPOSAL

<u>DATES</u>	<u>PROJECT TITLE/NUMBER</u>	<u>ROLE/ %EFFORT</u>	<u>SPONSOR</u>	<u>ANNUAL DIRECT COSTS</u>
<u>Active</u>				
01/01/2023- 12/31/2025	Machine Learning Strategies for Predicting the Risk of	Co-Investigator (PI Gui), 15% Effort	Department of Defense	\$406,290

	Suicide Using Clinical Note Text			
05/01/2022-04/01/2027	The Role of Visit Audio Recordings in Triadic Dementia Care (R01AG077113)	Co-Investigator (PI Barr, Chodosh), 2-5% Effort	National Institute on Aging (NIA)	\$637,209
07/01/2021-06/30/2026	Technology-Based Treatments for Substance Use Disorders. P30 Center of Excellence grant (5P30DA029926-11)	Co-Investigator (PI Marsch), 15% Effort	National Institute on Drug Abuse (NIDA)	\$791,611
8/06/2020-5/31/2025	Personalized Deep Learning Models of Rapid Changes in Major Depressive Disorder Symptoms using Passive Sensor Data from Smartphones and Wearable Devices (R01 MH123482)	Principal Investigator, 35% Effort	National institute of Mental Health (NIMH); National Institute of General Medical Sciences (NIGMS)	\$493,784
09/27/2022-05/31/2024	Ecological Momentary Assessment of Racial Microaggressions and Alcohol Use in African American Young Adults (1R21MD017454-01A1)	Site PI/Co-Investigator (PI Cavazos-Rehg), 8.5% Effort	National Institute on Minority Health and Health Disparities (NIMHD)	\$160,736
11/01/2022-12/01/2023	Precision Prevention of Cancer at Scale: Using Digital Phenotyping to Monitor and Target Modifiable Mental Health Risk Factors via a Smartphone App	Principal Investigator, 0% Effort	Dartmouth Cancer Center	\$100,000
09/01/2022-08/31/2023	Ecological Momentary Assessment of Racial Microaggressions and Alcohol Use in African American Young Adults (R44DA055161)	Site PI/Co-Investigator (PIs: Goodman, Cavazos, Ramsey), 2.5% Effort	National Institute on Drug Abuse (NIDA)	\$253,447

Completed

11/01/2021-11/01/2022	AudioCare: sharing meaningful moments from psychotherapy in the treatment of substance use and co-occurring disorders (P30 Pilot; P30DA029926)	Multiple Principal Investigator (PIs Barr, Jacobson)	National Institute on Drug Abuse (NIDA)	\$19,507
01/01/2020-12/31/2021	Digital Intervention to Treat Anxiety and Depression among Persons Receiving Treatment for Opioid Use Disorder (P30 Pilot; P30DA029926)	Principal Investigator, 0% Effort	National Institute on Drug Abuse (NIDA)	\$13,170
08/23/2018-05/31/2023	Harnessing Mobile Technology to Reduce Mental Health Disorders in College Populations (R01MH115128)	Consultant (PI Wilfley)	National Institute of Mental Health (NIMH)	\$653,429
2010-2011	Strengths and Weaknesses in Test-Taking: In what ways do Anxiety and Impulsivity Impact Negative Test Performance?	Principal Investigator	Psi Chi	\$850
2010	Strengths and Weaknesses in Test-Taking: In what ways do Anxiety and Impulsivity Impair Test Performance?	Principal Investigator	TruScholars	\$4,500

A2. OTHER SPONSORED ACTIVITY (GRANTS AND CONTRACTS) WITHOUT SIGNIFICANT CONTRIBUTION TO WRITING OF PROPOSAL

<u>DATES</u>	<u>PROJECT TITLE/NUMBER</u>	<u>ROLE/ %EFFORT</u>	<u>SPONSOR</u>	<u>ANNUAL DIRECT COSTS</u>
9/1/2015-2/28/2025	Northeast Node of the National Drug Abuse Clinical Trials Network	Co-Investigator (PI Marsch), 10% Effort	National Institute of Drug Abuse (NIDA)	\$726,374
07/01/2022-11/15/2022	An AI-powered, Veteran-led crowdsourcing space targeting veteran suicide through momentary digital interventions (Mission Daybreak, Phase I)	Consultant	U.S. Department of Veterans Affairs	\$250,000

2020, 2021, 2022	Development and Evaluation of Digital Assessments and Treatments for Anxiety and Depression	Principal Investigator, 0% Effort	Frank and Myra Weiser Scholar in the Neurosciences, Geisel School of Medicine, Dartmouth College	\$25,000
01/01/2020-12/31/2020	Iterative Effects of Episodic Future Thinking on Delay Discounting and Cannabis Use (P30 Pilot; P30DA029926)	Co-Investigator (PI Sofis), 0% Effort	National Institute on Drug Abuse (NIDA)	\$15,700
01/01/2020-12/31/2020	Evaluation of an Ecological Momentary Intervention of Implementation Intentions Delivered by Text Message to Reduce Cigarette Smoking (P30 Pilot; P30DA029926)	Co-Investigator (PI Lemley), 0% Effort	National Institute on Drug Abuse (NIDA)	\$17,200
2018-2020	Automating Coaching to Facilitate Dissemination of an Effective Prevention Program	Consultant (PI Taylor)	National Eating Disorders Association	\$62,500
2019	Advance the knowledge and treatment of Obsessive Compulsive Disorder by understanding the causes, neurobiological mechanisms, and clinical manifestations	Postdoctoral Fellow	Lee Baer fund for OCD Research and Teaching	\$65,000

B. PENDING SUBMISSIONS

<u>DATES</u>	<u>PROJECT TITLE/NUMBER</u>	<u>ROLE/ %EFFORT</u>	<u>SPONSOR</u>	<u>ANNUAL DIRECT COSTS</u>
12/01/2023-11/30/2030	Dartmouth Clinical and Translational Science Institute	Co-Investigator (MPIs Bernstein, Paulsen, Tosteson), 15% Effort	National Institute of Health	\$1,090,003
07/01/2024-06/30/2029	PROSPECT-MDD: Personalized Response Optimization through Sensor	Principal Investigator (MPI)	National Institute on	\$564,875

	Phenotyping and EHR to support Integrated Care Teams in Major Depressive Disorder	Cohen), 18% Effort	Mental Health (NIMH)	
07/01/2024-06/30/2026	Real-Time Tracking of Negative and Cognitive Symptoms in Schizophrenia Using Digital Phenotyping and Personalized Deep Learning Models (US ECR_2023_00003691)*	Principal Investigator, 0% Effort	Boehringer Ingelheim	\$439,256
	*Boehringer Ingelheim has stated that the grant will be awarded			
12/01/2023-12/01/2027	Using Automated Passive Sensor Data to Monitor Biopsychosocial Functioning and Inform Long-Term OUD Treatment Prediction (AUTOPILOT)	Principal Investigator, 35% Effort	National Institute on Drug Abuse (NIDA)	\$818,567

XIII. PROGRAM DEVELOPMENT

I serve as the Director of the Treatment Development and Evaluation Core of Dartmouth’s Center for Technology and Behavioral Health, a P30 “Center of Excellence Grant” from the National Institute on Drug Abuse (on which I serve as co-Investigator).

XIV. ENTREPRENEURIAL ACTIVITIES

N/A

XV. MAJOR COMMITTEE ASSIGNMENTS, INCLUSIVE OF PROFESSIONAL SOCIETIES

A. NATIONAL/INTERNATIONAL

<u>DATES</u>	<u>COMMITTEE</u>	<u>ROLE</u>	<u>INSTITUTION</u>
2023	Individually Measured Phenotypes to Advance Computational Translation in Mental Health (IMPACT-MH) (U01 & U24)	Study Section Member	National Institutes of Mental Health, National Institutes of Health
2023	FY23 Peer Review Medical Research Program (PRMRP)	Scientist Reviewer, Study Section Member	Department of Defense

2022; 2023	Technology in Psychiatry Summit, International Conference	Program Committee	Harvard Medical School
2021	UK Research and Innovation	Grant Reviewer	Medical Research Council, United Kingdom
2021	2021 Research Grant Awards	Grant Reviewer	International Obsessive Compulsive Disorder Foundation (IOCDF)

B. REGIONAL

<u>DATES</u>	<u>COMMITTEE</u>	<u>ROLE</u>	<u>INSTITUTION</u>
2022	Industrial Ties Research Subprogram Competition	Grant Reviewer	Louisiana Board of Regents

C. INSTITUTIONAL

<u>DATES</u>	<u>COMMITTEE</u>	<u>ROLE</u>	<u>INSTITUTION</u>
2022; 2023; 2024	Assistant Professor Search Committee for Two Positions	Search Committee Chair	Center for Technology and Behavioral Health, Department of Biomedical Data Science, Geisel School of Medicine, Dartmouth College
2022; 2023	Senior Search Committee	Search Committee Member	Center for Technology and Behavioral Health, Department of Biomedical Data Science, Geisel School of Medicine, Dartmouth College
2022; 2023	Council on Computing	Representative for the Geisel School of Medicine	Dartmouth College
2022	Senior Faculty Search Committee	Search Faculty Committee Member	Computer Science Department, Dartmouth College

2022; 2023	Psychiatry Research Track Residency	Site Lead	Geisel School of Medicine, Dartmouth College
2021; 2022; 2023	Faculty Council	Faculty Council Member	Geisel School of Medicine, Dartmouth College
2021; 2022	Quantitative Biomedical Sciences	PhD Admissions Committee	Dartmouth College
2020; 2021	Quantitative Biomedical Sciences	MS Admissions Committee	Dartmouth College
2019	Precision Health Program	Grant Reviewer	University of Michigan

XVI. EDITORIAL BOARDS

<u>DATES</u>	<u>JOURNAL</u>	<u>ROLE</u>
2023-Present	American Psychologist	Consulting Editor
2020-Present	Journal of Technology in Behavioral Science	Editorial Board
2021	Sensors	Guest Editor "Passive Sensing for Health"
2021	Frontiers in Psychology	Lead Guest Editor, Organized Topic: "Computational Modeling of Passively Collected Data to Predict Psychopathology"
2020	SAGE Open	Action Editor

XVII. JOURNAL REFEREE ACTIVITY

Web of Science Verified Peer Reviews: 120

<u>JOURNAL</u>	<u>NUMBER OF REVIEWS</u>
Assessment	13
Journal of Medical Internet Research	10
Journal of Technology in Behavioral Science	9
Journal of Affective Disorders	6
Clinical Psychological Science	5
Npj Digital Medicine	5
Aging & Mental Health	4
Journal of Consulting and Clinical Psychology	4
The Lancet Psychiatry	4

BMC Medicine	3
Behaviour Research and Therapy	3
Emotion	3
JMIR MHealth and UHealth	3
Plos One	3
Psychological Medicine	3
ACM Transactions on Computing for Healthcare	2
BJPsych Open	2
British Journal of Clinical Psychology	2
Clinical Psychologist	2
EClinicalMedicine	2
Health Psychology	2
JAMA Psychiatry	2
Journal of Anxiety Disorders	2
Journal of Autism and Developmental Disorders	2
Personalized Medicine	2
Psychological Methods	2
Psychotherapy Research	2
Science Advances	2
The Journal of Nervous and Mental Disease	2
Clinical Psychology & Psychotherapy	1
Explore: The Journal of Science and Healing	1
IEEE Journal of Biomedical and Health Informatics	1
JAMA Network Open	1
JMIR Formative Research (JFR)	1
JMIR Human Factors	1
Journal of Dual Diagnosis	1
Motivation and Emotion	1
New England Journal of Medicine	1
Perspectives on Psychological Science	1
Psychiatry Research	1
SAGE Open	1
Sensors	1

XVIII. AWARDS AND HONORS

A. RESEARCH AWARDS

DATES

Fall 2019

Fall 2018

AWARD

International Travel Award, Society for Ambulatory Assessment

Alies Muskin Career Development Leadership Program Award from the Anxiety and Depression Association of America (ADAA)

Spring 2018	Federation of Associations in Behavioral and Brain Sciences (FABBS) Doctoral Dissertation Research Excellence Award to acknowledge and honor graduate student scientists who have conducted doctoral dissertation research of superior scientific quality and broader societal impact.
Spring 2018	College of the Liberal Arts Raymond Lombra Graduate Student Award for the Excellence in Research in the Social Sciences, Pennsylvania State University
Spring 2018	Best Research Paper Award in Psychology, Pennsylvania State University
Spring 2014	Marty Murphy Award for Excellence in Psychology, Based on Excellence in Research and Exceptional Collegiality, Pennsylvania State University
Spring 2014	Honorable Mention, Society for Personality Assessment for Presenting "Using an ecological momentary assessment approach to examine the relationship between neuroticism and conscientiousness and variability in constructive and unconstructive thought processes"
Spring 2013	Honorable Mention, Association for the Psychological Science Student Caucus Student Research Awards for Presenting "The Temporal Relationship Between Anxiety and Depression: A Meta-Analysis"
Spring 2012	Honorable Mention, Anne Anastasi General Psychology Graduate Student Award by the American Psychological Association's First Division
Fall 2011	Best Student Poster Award from Anxiety Special Interest Group for presenting "Evaluating Quantity and Quality of Worrisome and Intrusive Thoughts and their Triggers: An Ecological Momentary Assessment Approach"
Spring 2011	Clark L. Hull Award for Scientific Excellence in Writing on Experimental Hypnosis from the American Journal of Clinical Hypnosis

Spring 2011	Regional Research Award from Psi Chi for presenting “The Effectiveness of Cognitive-Behavioral Therapy in Reducing Anxiety among those with Autism Spectrum Disorders: A Meta-Analysis”
Spring 2011	Best Oral Presentation from Psi Chi Annual Research Symposium for presenting “Learning in Hypnosis: Applications to Academic Performance”

B. HONORS

<u>DATES</u>	<u>AWARD</u>
Fall 2011	Pennsylvania State University Graduate Fellowship (93 awarded of the approximately 1,700 graduate students)
Spring 2011	President’s Certificate of Recognition for Outstanding Academic Achievement Awarded by Truman State University
Fall 2009	APA Student Affiliate Membership Awarded by Truman State University
Fall 2009	President’s List (4.0/4.0 GPA for Fall 2008, Spring 2009, Fall 2009, Fall 2010, and Spring 2011 semesters at Truman State University)

XIX. INVITED PRESENTATIONS

* Denotes current or former students
Underline denotes first or last author

A. INDIVIDUALLY INVITED PRESENTATIONS

A1. INTERNATIONAL INVITED PRESENTATIONS

<u>NUMBER</u>	<u>PRESENTATION</u>
8	Jacobson, N.C. (2023, June). Invited presentation presented at Annual Neuropsychiatry Virtual Conference, H.C. Wainwright & Co, Hosted Online.
7	Jacobson, N.C. (2023, March). Invited presentation presented at Centre for Digital Health Interventions, ETH Zurich, Zurich, Switzerland.
6	Jacobson, N.C. (2023, March). Invited presentation presented at the 9 th Annual Mood Disorders Summit, Clinical Options, Hosted Online.

- 5 **Jacobson, N.C.** (2022, June). Invited plenary session presented at the International Conference on Eating Disorders, Hosted Online.
- 4 **Jacobson, N.C.** (2022, May). Oral presentation presented at Open Digital Health, Hosted Online, Melbourne, Australia.
- 3 **Jacobson, N.C.** (2022, May). Oral presentation presented at the Expert Meeting and Special Issue Bridging Social Sciences and Computational Methods, Amsterdam, The Netherlands.
- 2 **Jacobson, N.C.** (2021, December). Oral presentation presented the Computational and Methodological Statistics (CMStatistics) Conference, King's College, London, United Kingdom.
- 1 **Jacobson, N.C.** (2021, September). Oral presentation presented the Treatment Selection Idea Lab Conference, University of Trier, Germany.

A2. NATIONAL INVITED PRESENTATIONS

- | <u>NUMBER</u> | <u>PRESENTATION</u> |
|---------------|--|
| 14 | Jacobson, N.C. (2023, December). Invited presentation presented at the Psychiatry Winter Update, Hosted by Medscape in Las Vegas, Nevada. |
| 13 | Jacobson, N.C. (2023, October). Invited presentation presented at the Stanford Mental Health Technology and Innovation Hub (Tech Hub), Hosted Online. |
| 12 | Jacobson, N.C. (2023, February). Invited presentation presented at the Department of Psychology, Boston University, Boston, Massachusetts. |
| 11 | Jacobson, N.C. (2022, December). Invited presentation presented at the Northwestern University, Center for Behavioral Intervention Technologies, Hosted Online. |
| 10 | Jacobson, N.C. (2022, September). Invited presentation presented at the University of Southern California, Neuroimaging and Informatics Program, Hosted Online. |
| 9 | Jacobson, N.C. (2022, September). Invited presentation presented at the Center for Depression, Anxiety and Stress, McLean Hospital, Hosted Online. |
| 8 | Jacobson, N.C. (2022, April). Oral presentation presented Neural Engineering & Translation Labs, at University of California San Diego, California. |
| 7 | Jacobson, N.C. (2022, April). Oral presentation presented the Psychiatry Grand Rounds, New York Medical College, New York. |

- 6 **Jacobson, N.C.** (2021, November). Oral presentation presented the National Eating Disorders Association Convention, Hosted Online.
- 5 **Jacobson, N.C.** (2021, February). Oral presentation presented at TecHealth Center at University of South Carolina.
- 4 **Jacobson, N.C.** (2021, February). Oral presentation presented at the Department of Psychological and Brain Sciences, University of Louisville.
- 3 **Jacobson, N.C.** (2020, November). Oral presentation presented at Clinical Research Methods and Statistics SIG, Association for Behavioral and Cognitive Therapies (ABCT) in November 2020 Philadelphia, PA (delivered virtually due to COVID-19).
- 2 **Jacobson, N.C.** (2020, October). Oral presentation presented the University of Virginia Psychology Department.
- 1 **Jacobson, N.C.** (2020, October). Using passive sensing to predict psychopathology across multiple time scales. Oral symposium presented at Technology in Psychiatry Summit in October 2020 Boston, MA (delivered virtually due to COVID-19).

A3. REGIONAL INVITED PRESENTATIONS

- | <u>NUMBER</u> | <u>PRESENTATION</u> |
|---------------|--|
| 3 | Jacobson, N.C. (2023, January). Oral presentation presented the Dartmouth Cancer Center. |
| 2 | Jacobson, N.C. (2021, April). Oral presentation presented the Department of Psychology and Brain Sciences, Dartmouth College. |
| 1 | Jacobson, N.C. (2021, February). Oral presentation presented the Grand Rounds, Geisel School of Medicine, Dartmouth College. |

B. CONFERENCE PRESENTATIONS

B1. INTERNATIONAL CONFERENCE PRESENTATIONS

- | <u>NUMBER</u> | <u>PRESENTATION</u> |
|---------------|--|
| 17 | Heinz, M.V.,* Price, G.D.,* Collins, A.C.,* & Jacobson, N.C. (2023, June). <i>A Novel Deep Learning Approach Using Time Series Actigraphy for MDD Ambulatory Detection in a Large Nationally Representative Sample</i> . Paper presented at the Society for Ambulatory Assessment 2023 Conference, June 5-7, 2023, Amsterdam. |
| 16 | Jacobson, N.C. , Nemesure, M.D.,* Collins, A.C.,* Price, G.D.,* Griffin, T.Z.,* Pillai, A., Heinz, M.V.,* Lekkas, D.,* & Campbell, A.T. (2023, June). <i>Depressive Symptoms as a Heterogeneous and Constantly Evolving Dynamical System: Idiographic Depressive Symptom Networks of</i> |

Rapid Symptom Changes among Persons with Major Depressive Disorder. Symposium presented at the Society for Ambulatory Assessment 2023 Conference, June 5-7, 2023, Amsterdam.

- 15 **Jacobson, N.C.** (2022, September). *Impact of Online Mental Health Screening Tools on Help-Seeking, Care Receipt, and Suicidal Ideation and Suicidal Intent: Evidence from Internet Search Behavior in a Large U.S. Cohort.* Oral symposium presented at International Society for Research on Internet Interventions, Pittsburgh, Pennsylvania.
- 14 **Jacobson, N.C.** (2022, June). *Idiographic Digital Phenotyping: Using Passively Collected Smartphone Sensors and Personalized Deep Learning Models to Predict Momentary Anxiety Symptoms Among Persons with Anxiety Disorders.* Oral symposium presented at Society for Ambulatory Assessment in June 2022 Online.
- 13 **Jacobson, N.C.** & Liu, L.,* (2021, May). *Uncovering When Dynamic Variables Optimally Predict One Another in Intensive Longitudinal Data using Novel Personalized Modeling Strategies.* Oral symposium presented at Society for Ambulatory Assessment in May 2021 Online.
- 12 **Jacobson, N.C.** (2021, March). *Designing a Generative Mental Health Chatbot using Artificial Intelligence.* Oral symposium presented at Society of Behavioral Medicine in March 2021 Online.
- 11 **Jacobson, N.C.** (2021, March). *Using Artificial Intelligence to Predict the Level of Personality Functioning based on Life History Narratives.* Oral symposium presented at Society of Personality Assessment in March 2021 Online.
- 10 **Jacobson, N.C.** (2021, March). *Using Machine Learning and Personality Traits to Understand the Predictability of Day-to-Day Affective Dynamics.* Oral symposium presented at Society of Personality Assessment in March 2021: Online.
- 9 **Jacobson, N.C.** (2020, January). *It's Time to Ask When: Investigating the Timing of Dynamics in Intensive Longitudinal Data.* Oral symposium presented at Society of Ambulatory Assessment (SAA) in January 2020 Melbourne, Australia.
- 8 **Jacobson, N.C.** (2020, January). *Compliance Thresholds in Intensive Longitudinal Data: Worse than Listwise Deletion: Call for Action.* Oral symposium presented at Society of Ambulatory Assessment (SAA) in January 2020 Melbourne, Australia.
- 7 Newman, M.G., & LaFreniere, L.S. & **Jacobson, N.C.** (2016, June). *Peak and trajectories of change in relaxation induced anxiety as predictors of outcome from CBT for GAD.* Oral symposium presented at the 46th Annual Meeting of the Society for Psychotherapy Research, Jerusalem, Israel. Chairs: Solomonov, N. and McCarthy, K.S.

- 6 Roche, M., **Jacobson, N.C.** & Pincus, A. (2015, August) *Examining the Static and Dynamic features of personality dysfunction in the Alternative Model of DSM-5*. Oral symposium submitted to the American Psychological Association in 2015 at Toronto, Canada.
- 5 **Jacobson, N.C.**, Newman, M.G., & Goldfried, M.R. (2015, June). *Clinical Feedback about Empirically Supported Treatments for Obsessive-Compulsive Disorder*. Oral presentation at the Society for Psychotherapy Research in June 2015 at Philadelphia, PA.
- 4 Newman, M.G., Castonguay, L.G., & **Jacobson, N.C.** (2015, June). *Attachment as a moderator of CBT for GAD with and without interpersonal and emotional processing techniques*. Oral presentation at the Society for Psychotherapy Research in June 2015 at Philadelphia, PA.
- 3 **Jacobson, N.C.**, Chow, S., & Newman, M.G., (2015, June). *The Differential Time-Varying Effect Model (DTVEM): Identifying Optimal Time Lags in Intensive Longitudinal Data*. Paper presented at the biennial conference of the Society for Ambulatory Assessment, University Park, PA.
- 2 Ji, L., Chow, S-M., **Jacobson, N.C.**, Schermerhorn, A.C. & Cummings, E.M. (2015, June). *Handling missing data in the modeling of ambulatory assessment data*. Paper presented at the biennial conference of the Society for Ambulatory Assessment, University Park, PA.
- 1 **Jacobson, N.C.**, Newman, M.G., & Goldfried, M.R. (2013, June). *Clinical Experiences in Conducting Empirically Supported Treatments: Obsessive-Compulsive Disorder*. Oral presentation at the Society for the Exploration of Psychotherapy Integration in June 2013 at Barcelona, Spain.

B2. NATIONAL CONFERENCE PRESENTATIONS

- | <u>NUMBER</u> | <u>PRESENTATION</u> |
|---------------|--|
| 64 | Jacobson, N.C. (2023, May). Predicting Anxiety Symptom Changes with Smartphone Sensors and Personalized Deep Learning Models. Paper presented at the Association for the Psychological Science (APS) Conference, May 2023, Washington, DC. |
| 63 | Jacobson, N.C. (2023, May). Using Artificial Intelligence and Wearable Sensors to Accurately Predict Symptom Severity of Generalized Anxiety Disorder Through Digital Phenotyping in Daily Life. Paper presented at the Association for the Psychological Science (APS) Conference, May 2023, Washington, DC. |
| 62 | Jacobson, N.C. (2023, May). Leveraging Technology in Predictive Modeling: Promises and Challenges (Discussant Role). Symposium presented at the Association for the Psychological Science (APS) Conference, May 2023, Washington, DC. |

- 61 Price, G.D.,* Nemesure, M.D.,* Heinz, M.V.,* Griffin, T.Z.,* Pillai, A., Collins, A.C.,* Nepal, S., Lekkas, D.,* Campbell, A.T., & **Jacobson, N.C.** (2023, April). Predicting Future MDD Symptom Variability With Passively-Collected Wearable Movement Information In A Clinical Population: A Machine Learning Approach. Poster presented at the Anxiety and Depression Association of America (ADAA) Conference, April 13-16, 2023, Washington, DC.
- 60 **Jacobson, N.C.** (2022, November). *Flattening the Suicidal Ideation Curve: COVID-19 Stay-at-Home Orders Are Associated With Immediate Changes in Suicidal Search Behavior in the United States*. Oral symposium presented at Association for Behavioral and Cognitive Therapies (ABCT) in November, 2022 New York, NY.
- 59 **Jacobson, N.C.** (2022, March). *Digital Biomarkers of Social Anxiety Severity: Digital Phenotyping Using Passive Smartphone Sensors*. Oral symposium presented at Association for Behavioral and Cognitive Therapies (ABCT) in March, 2022 Denver, CO.
- 58 **Jacobson, N.C.** (2022, March). *Idiographic Digital Phenotyping: Using Passively Collected Smartphone Sensors and Personalized Deep Learning Models to Predict Momentary Anxiety Symptoms Among Persons with Anxiety Disorders*. Oral symposium presented at Association for Behavioral and Cognitive Therapies (ABCT) in March, 2022 Denver, CO.
- 57 **Jacobson, N.C.** & Liu, L.* (2021, November). *Using Wearable Movement Data Captured in Daily Life and Deep Learning to Predict Deterioration in Anxiety Disorders Across 17 18 Years*. Oral symposium presented at Association for Behavioral and Cognitive Therapies (ABCT) in November, 2021 Online.
- 56 **Jacobson, N.C.** & Liu, L.* (2021, November). *Uncovering When Dynamic Variables Optimally Predict One Another in Intensive Longitudinal Data using Novel Personalized Modeling Strategies*. Oral symposium presented at Association for Behavioral and Cognitive Therapies (ABCT) in November, 2021 Online.
- 55 **Jacobson, N.C.** (2021, October). *Designing a Dynamic Generative Mental Health Chatbot using Artificial Intelligence*. Oral symposium presented at Technology in Psychiatry Summit in October, 2021 Online.
- 54 **Jacobson, N.C.** (2021, October). *Using Passive Smartphone and Wearable Sensor Data to Develop Contextualized and Personal Indicators of Anxiety and Posttraumatic Stress Disorders*. Oral symposium presented at Technology in Psychiatry Summit in October, 2021 Online.
- 53 **Jacobson, N.C.** (2021, March). *Passively Collected Digital Biomarkers of Worry Severity among Persons Living with HIV*. Oral symposium presented at

- Anxiety and Depression Association of America (ADAA) in March, 2021 Online.
- 52 Nemesure, M.D., Heinz, M.V., Huang, R., & **Jacobson, N.C.** (2020, November). *Predictive Modeling of Psychiatric Illness using Electronic Medical Records and a Novel Machine Learning Approach with Artificial Intelligence*. Oral symposium presented at Association for Behavioral and Cognitive Therapies (ABCT) in November 2020 Philadelphia, PA.
- 51 **Jacobson, N.C.** (2020, November). *Experiences in Conducting a Large Global Intervention Trial: Recommendations and Lessons Learned*. Oral symposium presented at Association for Behavioral and Cognitive Therapies (ABCT) in November 2020 Philadelphia, PA.
- 50 Nemesure, M.D*, Heinz, M.V.*, Huang, R.* & **Jacobson, N.C.** (2020, April). *Predictive Modeling of Psychiatric Illness in College Population Using Novel Machine Learning Approach with Artificial Intelligence*. Poster presented at American Psychiatric Association in April 2020 Philadelphia, PA. Note: Conference Cancelled due to COVID-19.
- 49 **Jacobson, N.C.** (2020, March). *Passive Sensing of Prediction of Moment-to-Moment Depressed Mood among Persons with Clinical Levels of Depression Sample using Smartphones*. Oral symposium presented at Anxiety and Depression Association of America (ADAA) in March 2020 San Antonio, TX. Chairs: **Jacobson, N.C.** & Summers, B. Note: Conference Cancelled due to COVID-19.
- 48 **Jacobson, N.C.** (2020, March). *Passively Collected Digital Biomarkers of Worry Severity among Persons Living with HIV*. Oral symposium presented at Anxiety and Depression Association of America (ADAA) in March 2020 San Antonio, TX. Note: Conference Cancelled due to COVID-19.
- 47 **Jacobson, N.C.** (2019, November). *Digital Phenotyping in a Large Sample across the Globe: Passive Digital Biomarkers of Anxiety Depend on the Global Geospatial Context*. Oral symposium presented at Association for Behavioral and Cognitive Therapies (ABCT) in November 2019 Atlanta GA. Chairs: **Jacobson, N.C.** & Wilhelm, S.
- 46 **Jacobson, N.C.** (2019, November). *Large Global Open Trial of a Personalized Smartphone Intervention: Personalized Feedback Leads to Large Reductions in Anxiety and Depression in a Transdiagnostic Sample*. Oral symposium presented at Association for Behavioral and Cognitive Therapies (ABCT) in November 2019 Atlanta GA. Chairs: Frumkin, M. & Rodebaugh, T.
- 45 **Jacobson, N.C.** (2019, November). *Objective digital phenotypes of worry severity, pain severity and pain chronicity in persons living with HIV*. Poster presented at Anxiety Disorders Special Interest Group: Association for Behavioral and Cognitive Therapies (ABCT) in November 2019 Atlanta GA.

- 44 **Jacobson, N.C.**, Weingarden, H., & Wilhelm, S. (2019, March). *Digital Biomarkers of Mood Disorders and Symptom Change*. Poster presented at Anxiety and Depression Association of America (ADAA) in March 2019 Chicago, IL.
- 43 **Jacobson, N.C.** & Newman, M.G. (2018, November). *Bayesian Generalized Additive Models: Investigating the Non-Linear Relationships among Clinical Anxiety, Clinical Depression, and Momentary Affect in Daily Life*. Oral symposium presented at Association for Behavioral and Cognitive Therapies (ABCT) in November 2018 Washington, DC. Chair: De Nadai, A.
- 42 **Jacobson, N.C.** & Newman, M.G. (2018, November). *Replicability of Ideographic Models of Psychopathology: Applications to Ideographic Dynamic Factor Models of Affect in a Transdiagnostic Sample*. Oral symposium presented at Association for Behavioral and Cognitive Therapies (ABCT) in November 2018 Washington, DC. Chairs: De Nadai, A. & Henderson, C.
- 41 **Jacobson, N.C.** & Newman, M.G. (2018, April). *Depression Variability Predicts Later Anxiety for Those with Depressive Disorders*. Oral symposium presented at Anxiety and Depression Association of America (ADAA) in April 2018 Washington, DC. Chairs: Shin, K.E. & Newman, M.G.
- 40 Roche, M.J., Phillips, J., & **Jacobson, N.C.** (March, 2018). Examining the validity of the Level of Personality Functioning Scale across self and observer reports. Oral symposium presented at Society for Personality Assessment Annual Convention, in March 2018 Washington, D.C. Chair: Roche, M.J.
- 39 **Jacobson, N.C.** & Newman, M.G. (2017, November). *Cross-sectional and Longitudinal Associations among Facets of Neuroticism with Anxiety and Depressive Disorders*. Oral symposium presented at Association for Behavioral and Cognitive Therapies (ABCT) in November 2017 San Diego, CA. Chair: Khazanov G.K.
- 38 **Jacobson, N.C.** & Newman, M.G. (2017, November). *Non-Linear Timing Effects on Change: Using the Differential Time-Varying Effect Model to Examine Timing Effects of Interventions*. Oral symposium presented at Association for Behavioral and Cognitive Therapies (ABCT) in November 2017 San Diego, CA. Chair: De Nadai, A.S.
- 37 **Jacobson, N.C.** & Newman, M.G. (2017, November). *Effect of Depression Variability on Later Anxiety for Those with Depressive Disorders*. Oral symposium presented at Association for Behavioral and Cognitive Therapies (ABCT) in November 2017 San Diego, CA. Chairs: Shin, K.E. & Newman, M.G.
- 36 Newman, M.G., LaFreniere, L.S. & **Jacobson, N.C.** (2017, April). *Peak and trajectories of change in relaxation induced anxiety as predictors of outcome from CBT for GAD*. Oral symposium presented to the 37th

Annual Meeting of the Anxiety and Depression Association of America, San Francisco, CA. Chairs: LaFreniere, L.S. & Newman, M.G.

- 35 Newman, M.G., **Jacobson, N.C.** Szkodny, L.E. & Sliwinski, M.J. (2017, April). Contrast avoidance in daily life. In M.G. Newman (chair), The contrast avoidance model: Reconceptualizing worry in GAD and as a transdiagnostic process. Oral symposium presented to the 37th Annual Meeting of the Anxiety and Depression Association of America, San Francisco, CA. Chair: Newman, M.G.
- 34 **Jacobson, N.C.** & Newman, M.G. (2016, October). *Anxiety and Depression as Bidirectional Risk Factors for One Another: A Meta-Analysis of Longitudinal Studies*. Oral symposium presented at Association for Behavioral and Cognitive Therapies (ABCT) in October 2016 New York, NY. Chairs: & **Jacobson, N.C.** & Newman, M.G.
- 33 Newman, M.G., **Jacobson, N.C.** and Szkodny, L.E. & Sliwinski, M.J. (2016, October). *Contrast avoidance in daily life. The contrast avoidance model: Reconceptualizing worry in GAD and as a transdiagnostic process*. Oral symposium presented to the 50th Annual Meeting of the Association for Behavioral and Cognitive Therapies, New York, N. Y. Chair: Erickson, T.M.
- 32 **Jacobson, N.C.** & Newman, M.G. (2016, April). *Anxiety Disorders as a Longitudinal Risk Factor for Depressive Disorders: A Meta-Analysis*. Oral symposium presented at Anxiety and Depression Association of America (ADAA) in April 2016 Philadelphia, PA. Chairs: **Jacobson, N.C.** & Newman, M.G.
- 31 Lord, K., **Jacobson, N.C.**, & Newman M.G. (2016, April). *Social support in bereaved spouses mediates the relationship between anxiety and depression*. Poster presented at the 36th Annual Convention of the Anxiety and Depression Association of America, Philadelphia, PA.
- 30 Lord, K. **Jacobson, N.C.**, & Newman M.G. (2016, April). *Social criticism moderates the relationship between anxiety disorders and depressive disorders 10 years later*. Poster presented at the 36th Annual Convention of the Anxiety and Depression Association of America, Philadelphia, PA.
- 29 **Jacobson, N.C.**, Newman, M.G., & Goldfried, M. (2015, November). *Effectiveness, Strengths, and Limitations of Empirically Supported Treatments for Obsessive-Compulsive Disorder based on Feedback from Clinicians*. Oral symposium presented at Association of Behavioral and Cognitive Therapies in November 2015 at Chicago, IL. Chairs: Szkodny, L. & **Jacobson, N.C.**
- 28 **Jacobson, N.C.**, Chow, S, & Newman, M.G. (2015, November). *Analyzing All Nonlinear Dynamics in Intensive Longitudinal Data*. Oral symposium presented at Association of Behavioral and Cognitive Therapies in

- November 2015 at Chicago, IL. Chairs: **Jacobson, N.C.** & Rappaport, L.
- 27 **Jacobson, N.C.**, Rappaport, L., Atkins, D., & Rogge, R. (2015, November). *Causal Inference in Clinical Research: Direct Effects and Mediation*. Panel discussion at Association of Behavioral and Cognitive Therapies in November 2015 at Chicago, IL. Chairs: Rappaport, L.
- 26 Newman, M.G., Castonguay, L.G., **Jacobson, N.C.**, & Moore, G. (2015, November). *Adult Attachment as a Moderator of CBT Versus CBT Plus Interpersonal and Emotional Processing Therapy for GAD*. Oral symposium presented at Association of Behavioral and Cognitive Therapies in November 2015 at Chicago, IL. Chairs: Antony, M.
- 25 Reeves, J., Baldwin, S., Moore, M. Rappaport, L. & **Jacobson, N.C.** (2015, November). *Extensions of Structural Equation Modeling to Clinical Research*. Symposium presented at Association of Behavioral and Cognitive Therapies in November 2015 at Chicago, IL. Chairs: Rappaport, L. Discussant: **Jacobson, N.C.**
- 24 LaFreniere, L.S., Newman, M.G., & **Jacobson, N.C.** (2015, November). *Relaxation-induced anxiety: Effects on treatment outcome for generalized anxiety disorder*. Poster presented at Association of Behavioral and Cognitive Therapies in November 2015 at Chicago, IL.
- 23 Mortazavi, A, Soto, J. & **Jacobson, N.C.** (2015, February). Positive emotion, drinking motivation, and problematic drinking: A case for cultural variations. Poster presentation at the Society for Personality and Social Psychology in February 2015 at Long Beach, NJ.
- 22 **Jacobson, N.C.**, & Newman, M.G. (2014, November). *Analyzing All Longitudinal Interdependencies in Intensive Longitudinal Data Simultaneously with Person-Specific Models*. Oral symposium accepted to Association of Behavioral and Cognitive Therapies in November 2014 at Philadelphia, PA. Chairs: **Jacobson, N.C.** & Rappaport, L.
- 21 **Jacobson, N.C.**, Laurenceau, J.P, Atkins, D., & Wright; A.G. (2014, November). *Intensive Data: Bringing Intensive Longitudinal Data and Ambulatory Assessment to Clinical Research and Practices*. Panel discussion at Association of Behavioral and Cognitive Therapies in November 2014 at Philadelphia, PA. Chairs: Rappaport, L.
- 20 **Jacobson, N.C.**, Newman, M.G., & Goldfried, M.R. (2014, November). *Clinical Experiences in Conducting Empirically Supported Treatments: Obsessive-Compulsive Disorder*. Poster presentation at the Association of Behavioral and Cognitive Therapies in November 2014 at Philadelphia, PA.
- 19 Szkodny, L.E., **Jacobson, N.C.**, & Newman, M.G. (2014, November). *Relationship Between PTSD Symptomatology and Variability in Daily Thought Processes Using an Ecological Momentary*

Assessment Approach. Poster presentation at the Association of Behavioral and Cognitive Therapies in November 2014 at Philadelphia, PA.

- 18 **Jacobson, N.C.** & Newman, M.G. (2014, March). *Anxiety Predicting Depression across Minutes, Hours, and Days: An Ecological Momentary Assessment*. Oral symposium accepted to Anxiety and Depression Association of at Chicago, IL. Chairs: **Jacobson, N.C.** & Newman, M.G.
- 17 Szkodny, L.E., **Jacobson, N.C.**, & Newman, M.G. (2014, March). *Using an ecological momentary assessment approach to examine the relationship between neuroticism and conscientiousness and variability in constructive and unconstructive thought processes*. Poster presented at the Annual Meeting of the Society for Personality Assessment, Arlington, VA. **Honorable Mention, for the Best Student Poster Award.**
- 16 Newman, M.G, Castonguay, L., **Jacobson, N.C.** & Fisher, A.J. (2013, November). *Attachment as a Moderator of CBT for GAD With and Without Interpersonal and Emotional Processing Techniques*. Oral presentation at the Association of Behavioral and Cognitive Therapies in November 2013 at Nashville, TN.
- 15 Newman, M.G., Yen, J., Mitra, P., Murphy, W., **Jacobson, N.C.**, and Kim, H. (2013, November). *Supervised Machine Learning Classification of Journals Entries About Emotional Personal Experiences*. Paper presented at The American Medical Informatics Association, Washington, D. C.
- 14 **Jacobson, N.C.**, & Newman, M.G. (2013, May). *The Temporal Relationship Between Anxiety and Depression: A Meta-Analysis*. Poster presentation at the Association for the Psychological Science (APS) Conference in May 2013 at Washington DC. **Honorable Mention, Association for the Psychological Science Student Caucus Student Research Awards.**
- 13 **Jacobson, N.C.**, & Newman, M.G. (2013, May). *Avoidance Mediates Earlier Anxiety and Later Depression over a Decade Later*. Poster presentation at the Association for the Psychological Science (APS) Conference in May 2013 at Washington DC.
- 12 **Jacobson, N.C.**, & Newman, M.G. (2013, May). *Anxiety Predicts Depression over the Course of Minutes, Hours, and Days: An Ecological Momentary Assessment*. Poster presentation at the Association for the Psychological Science (APS) Conference in May 2013 at Washington DC.
- 11 **Jacobson, N.C.**, & Newman, M.G. (2013, April). *State Anxiety Predicting State Depression across Hours: An Ecological Momentary Assessment*. Poster presentation at the Association for the Workshop on Intensive

Longitudinal Methods: Analysis of Diary and Experience Sampling Data Conference in April 2013 at State College, Pennsylvania.

- 10 **Jacobson, N.C.**, & Newman, M.G. (2012, November). *The Temporal Relationship Between Anxiety and Depression: A Meta-Analysis*. Poster presented at the Association for Behavioral and Cognitive Therapies, National Harbor, Maryland.
- 9 **Jacobson, N.C.**, & Newman, M.G. (2012, November). *Testing the Mediating Role of Avoidance Between Anxiety and Depression*. Poster presented at the Association for Behavioral and Cognitive Therapies, National Harbor, Maryland.
- 8 **Jacobson, N.C.**, & Newman, M.G. (2012, November). *Anxiety as a Temporal Predictor of Depression during Brief Time Periods: An Ecological Momentary Assessment*. Poster presented at the Association for Behavioral and Cognitive Therapies, National Harbor, Maryland.
- 7 **Jacobson, N.C.**, & Constance, J (2012, November). *Effectiveness of Cognitive-Behavioral Therapy in Reducing Anxiety among those with Autism Spectrum Disorders: a Meta-Analysis*. Poster presentation at the Association for Behavioral and Cognitive Therapies, National Harbor, Maryland.
- 6 **Jacobson, N.C.**, & Constance, J (2012, May). *Effectiveness of Cognitive-Behavioral Therapy in Reducing Anxiety among those with Autism Spectrum Disorders: a Meta-Analysis*. Poster presentation at the Society for Psychotherapy Research in May 2012 at Virginia Beach, VA.
- 5 **Jacobson, N.C.** (2012, May). *Strengths and Weaknesses in Test-Taking: In What Ways Do Anxiety and Impulsivity Impact Test Performance?* Poster presentation at the Association for the Psychological Science (APS) Conference in May 2012 at Chicago, IL.
- 4 **Jacobson, N.C.**, Kramer, S., Tharp, A., Harmon, K., Cejas, G. & Costa, S. (2012). *Deficits of Encoding in Hypnosis: A Result of Altered State of Awareness*. Poster presentation at the Association for the Psychological Association Annual Conference in May 2012 at Chicago, IL.
- 3 **Jacobson, N.C.**, & Constance (2012, May). *Effectiveness of Cognitive-Behavioral Therapy in Reducing Anxiety among those with Autism Spectrum Disorders: A Meta-Analysis*. Poster presentation at the Association for the Psychological Science National Conference in May 2012 at Chicago, IL.
- 2 Szkodny, L.E., Mogle, J.A., **Jacobson, N. C**, Newman, M.G., Sliwinski, M.J. (2011, November). *Evaluating Quantity and Quality of Worrisome and Intrusive Thoughts and their Triggers: An Ecological Momentary Assessment Approach*. Poster presentation at Association for

Behavioral and Cognitive Therapies Anxiety Special Interest Group in November, 2011 at Toronto, Ontario. **Best Student Poster Award from Anxiety Special Interest Group.**

- 1 **Jacobson, N.C.**, Jacobson, B, Clark, S., & Breault, M. (2010, May). *She Makes Me Look Like That?: The Effects of Radiating Beauty in Romantic Relationships*. Poster presentation at the Association for the Psychological Science (APS), National Conference, in May 2010 at Boston, MA.

B3. REGIONAL/LOCAL CONFERENCE PRESENTATIONS

- | <u>NUMBER</u> | <u>PRESENTATION</u> |
|----------------------|---|
| 9 | Jacobson, N.C. , Kramer, S., Tharp, A., Harmon, K., Cejas, G., & Costa, S. (2011, May). <i>Learning in Hypnosis: Applications to Academic Performance</i> . Poster presentation at the Midwestern Psychological Association Conference in May 2011 at Chicago, IL. Regional Research Award from Psi Chi: International Honor Society in Psychology. |
| 8 | Constance, J., & Jacobson, N.C. (2011, May). <i>Effectiveness of Cognitive-Behavioral Therapy in Reducing Anxiety among those with Autism Spectrum Disorders: a Meta-Analysis</i> . Poster presentation at the Midwestern Psychological Association Conference in May 2011 at Chicago, IL. |
| 7 | Jacobson, N.C. , Jacobson, B., Clark, S. & Breault, M. (2011, May). <i>Male Preferences in the Female Body Type</i> . Poster presentation at the Midwestern Psychological Association Conference in May 2011 at Chicago, IL. |
| 6 | Jacobson, N.C. , & Vittengl, J. (2011, May). <i>Strengths and Weaknesses in Test-Taking: In What Ways Do Anxiety and Impulsivity Impact Test Performance?</i> Poster presentation at the Midwestern Psychological Association Conference in May 2011 at Chicago, IL. |
| 5 | Ruberton, P., Jacobson, N.C. , Bangert, L., Constance, J., Pearlstein, J., & Vittengl, J. (2011, May). <i>Seeing the Good in Life: The Effects of Gratitude Reflection on Perceived Life Events and Subjective Well-Being</i> . Poster presentation at the Midwestern Psychological Association Conference in May 2011 at Chicago, IL. |
| 4 | Schickler, A., Brown, J., Ruberton, P., Constance, J., Jacobson, N.C. , Pearlstein, J., Spalding, K, Conner, D. & Vittengl, J. (2011, May). <i>Statistics Skills Preferred by Psychology Graduate Programs</i> . Poster presentation at the Midwestern Psychological Association Conference in May 2011 at Chicago, IL. |
| 3 | Jacobson, N.C. , & Vittengl, J. (2011, March). <i>Strengths and Weaknesses in Test-Taking: In What Ways Do Anxiety and Impulsivity Impact Test</i> |

Performance? Poster presentation before congress in March at Jefferson City, MO.

- 2 **Jacobson, N.C.**, Kramer, S., Tharp, A., Costa, S., & Hawley, P. (2010, June). *Testing under a Trance: The Effect of Post-Hypnotic Suggestion on Academic Performance*. Poster presentation at the Midwestern Psychological Association Annual Conference in June 2010 at Chicago, IL.
- 1 **Jacobson, N.C.**, Kramer, S., Tharp, A., Costa, S., & Hawley, P. (2010, May). *Testing under a Trance: The Effect of Post-Hypnotic Suggestion on Academic Performance*. Poster presentation at the Missouri Psychological Association's Annual Conference in May 2010 at Lake of the Ozarks, MO.

XX. BIBLIOGRAPHY

A. PEER-REVIEWED PUBLICATIONS IN PRINT, IN PRESS OR OTHER MEDIA

Total Number of Peer Reviewed Journal Articles: 97

Total Number of 1st author: 27

Total Number of Last/Senior Author: 39

Google Scholar H-Index: 29; i10-index: 58; Number of Citations 2,973

* Denotes current or former students

Underline denotes first or last author

A1. MOST SIGNIFICANT PEER-REVIEWED PUBLICATIONS

<u>NUMBER</u>	<u>PUBLICATION</u>	<u>CITATIONS</u>
8	Heinz, M.V.*, Price, G.*, Ruan, F.*, Klein, R.J.*, Nemesure, M.*, Lopez, A.,* & <u>Jacobson, N.C.</u> (2022). Association of Selective Serotonin Reuptake Inhibitor Use With Abnormal Physical Movement Patterns as Detected Using a Piezoelectric Accelerometer and Deep Learning in a Nationally Representative Sample of Noninstitutionalized Persons in the US. <i>JAMA Network Open</i> . https://doi.org/10.1001/jamanetworkopen.2022.5403	5
7	Fitzsimmons-Craft, E.E., Chan, W.S., Smith, A.C., Firebaugh, M., Fowler, L.A., DePietro, B., Topooco, N., Wilfley, D.E., Taylor, C.B., & <u>Jacobson, N.C.</u> (2022). Effectiveness of a chatbot for eating disorders prevention: A randomized clinical trial. <i>International Journal of Eating Disorders</i> . https://doi.org/10.1002/eat.23662	27
6	<u>Jacobson, N.C.</u> & Bhattacharya, S.* (2021). Digital Biomarkers of Anxiety Disorder Symptom Changes Personalized Deep Learning Models Using	27

Smartphone Sensors Accurately Predict Anxiety Symptoms from Ecological Momentary Assessments. *Behaviour Research and Therapy*.
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|---|--|-----|
| 5 | <u>Jacobson, N.C.</u> , Lekkas, D.* , Huang, R.* , & Thomas, N.* | 28 |
| | (2021). Deep Learning Paired with Wearable Passive Sensing Data Predicts Deterioration in Anxiety Disorder Symptoms across 17-18 Years. <i>Journal of Affective Disorders</i> , 282, 104-111.
https://doi.org/10.1016/j.jad.2020.12.086 | |
| 4 | Nemesure, M.D*, Heinz, M.V.* , Huang, R.* & <u>Jacobson, N.C.</u> | 100 |
| | (2021). Predictive Modeling of Psychiatric Illness using Electronic Medical Records and a Novel Machine Learning Approach with Artificial Intelligence. <i>Scientific Reports</i> .
https://doi.org/10.1038/s41598-021-81368-4 | |
| 3 | <u>Jacobson, N.C.</u> , Lekkas, D.* , Price, G.P.* , Heinz, M.V.* , Song, M.* , O'Malley, A.J. & Barr, P.J. | 202 |
| | (2020). Flattening the Mental Health Curve: COVID-19 Stay-at-Home Orders Are Associated With Alterations in Mental Health Search Behavior in the United States, <i>JMIR Mental Health</i> , 7, e19347.
http://dx.doi.org/10.2196/19347 | |
| 2 | <u>Jacobson, N.C.</u> , Weingarden, H., & Wilhelm, S. | 78 |
| | (2019). Digital Biomarkers of Mood Disorders and Symptom Change. <i>Nature Partner Journal (npj): Digital Medicine</i> , 2, 1-2. http://dx.doi.org/10.1038/s41746-019-0078-0 | |
| 1 | <u>Jacobson, N.C.</u> & Newman, M.G. | 358 |
| | (2017). Anxiety and depression as bidirectional risk factors for one another: A meta-analysis of longitudinal studies. <i>Psychological Bulletin</i> , 143, 1155-1200.
http://dx.doi.org/10.1037/bul0000111 | |

A2. ALL PEER-REVIEWED PUBLICATIONS

- | <u>NUMBER</u> | <u>PUBLICATION</u> |
|----------------------|---|
| 97 | Price, G.D.,* Heinz, M.V.,* Collins, A.C.* , & <u>Jacobson, N.C.</u> (in press). Detecting major depressive disorder presence using passively-collected wearable movement data in a nationally-representative sample. <i>Psychiatry Research</i> . https://doi.org/10.1016/j.psychres.2023.115693 |
| 96 | Bryan, A.C.,* Heinz, M.V.,* Salzhauer, A.J.* , Price, G.D.,* Tlachac, M.L., & <u>Jacobson, N.C.</u> (accepted, pending minor revisions). Behind the screen: A narrative review of advancements in mobile and wearable |

passive sensing for mental health assessment. *Biomedical Materials and Devices*.

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B. MANUSCRIPTS IN REVIEW

<u>NUMBER</u>	<u>PUBLICATION</u>
15	Jacobson, N.C. Price, G.*, Song, M.K.*, Wortzman, Z.*, Nguyen, N.D.*, & Klein, R.J.* Machine Learning Models Predicting Daily Affective

Dynamics Via Personality and Psychopathology Traits. *Revise and Resubmit, Emotion.*

- 14 Price, G.D.,* Collins, A.C.,* Mackin, D.M.,* Heinz, M.V.,* & **Jacobson, N.C.**. Use of passively-collected actigraphy data to detect individual depressive symptoms in a clinical subpopulation and a general population. *Revise and Resubmit, Journal of Psychopathology and Clinical Science.*
- 13 Klein, R.J.* , Lekkas, D.,* Nguyen, N.D.,* & **Jacobson, N.C.** Comparing Transdiagnostic Risk Factors: Predicting Emergence of Significant Depressive, Anxiety, and Substance Abuse Symptoms. *Revise and Resubmit, Child Psychiatry and Human Development.*
- 12 Langener, A.M.,* Stulp, G., **Jacobson, N.C.** Costanzo, A., Jagesar, R.R., Kas, M.J. & Bringmann, L.F. It's all about timing: Exploring different temporal resolutions for analyzing digital phenotyping data. *Revise and Resubmit, Advances in Methods and Practices in Psychological Science (AMPSS).*
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- 10 Lekkas, D.,* & **Jacobson, N.C.** Breaking the Silence: Leveraging Social Interaction Data to Identify High-Risk Suicide Users Online Using Network Analysis and Machine Learning. *Revise and Resubmit, Cyberpsychology: Journal of Psychosocial Research on Cyberspace.* <https://doi.org/10.31234/osf.io/m6h4x>
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- 8 Nepal, S., Pillai, A., Wang, W., Griffin, T.,* Collins, A.,* Heinz, M.,* Lekkas, D.,* Mirjafari, S., Nemesure, M.,* Price, G.,* **Jacobson, N.**, & Campbell, A.T. MoodCapture: Depression detection using in-the-wild smartphone images. *Revise and Resubmit, CHI 2024.*
- 7 Lekkas, D.,* Oh, J.Y.,* Matsumura, R.E.,* Perrier, A.D.,* & **Jacobson, N.C.** Profiling the Digital Mosaic of Uncensored Suicidal Thought and Behavior: A Theory-Driven Network Analysis of Online Written Expression. <https://doi.org/10.31234/osf.io/79mwn>
- 6 Nemesure, M.D.,* Heinz, M.V.,* Klein, R.,* McFadden, J.,* & **Jacobson, N.C.** Predictive Modeling Approach to Evaluate Individual Response to a

Physical Activity Digital Intervention for Subjects with Major Depressive Disorder. <https://doi.org/10.31234/osf.io/3kijyh>

- 5 **Jacobson, N.C.**, Abreu, V., & Limb, A.N. Using Wearables to Predict Clinical Anxiety: Digital Biomarkers of Sleep are able to Accurately Predict Anxiety Symptom Severity.
- 4 **Jacobson, N.C.** & Wilhelm, S. Large Open Trial of a Personalized Smartphone Intervention: Using Digital Phenotyping to Deliver Personalized Feedback on Maintenance Factors Reduce Anxiety and Depressive Affect in Daily Life.
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- 1 Wang, Y.* , Abreu, V.* , Faddenn, J.* , Bhattacharya, S.* & **Jacobson, N.C.** Anxiety Disorders Strongly Predict an Increased Risk of Developing Eating Disorders: An Investigation of Bidirectional Sequential Comorbidity within a Large Nationally Representative Sample of Adults in the United States

C. BOOKS
NUMBER

- 1 **Jacobson, N.C.**, Kowatsch, T. & Marsch, L.A. (Eds.) (2022). Digital Therapeutics for Mental Health and Addiction: The State of the Science and Vision for the Future. Elsevier Press. ISBN: 9780323900454

D. BOOK CHAPTERS

NUMBER

PUBLICATION

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XXI. PERSONAL STATEMENT

Research

From an early age, I was attracted to technology and coding. While pursuing a PhD in clinical psychology, I gained firsthand knowledge of the challenges in mental health care delivery. Recognizing these issues, I envisioned technology as a means to enhance the care landscape. Concurrent with my clinical studies, I explored the field of quantitative psychology, completing much of the available graduate coursework and a substantial project that mirrored the depth of a second dissertation. After my doctorate, I undertook a fellowship at Harvard Medical School and Massachusetts General Hospital. Here, my focus was twofold: on digital interventions, which involve using technology such as apps to support mental health, and on digital phenotyping, the practice of analyzing data from personal devices to understand individual health patterns. My work during this period centered on developing software for data collection from smartphones, refining methods to extract meaningful health indicators (or "biomarkers") from this data, and weaving in my psychological knowledge to shape our analytical models. This blend of expertise positioned me to lead a lab in computational psychiatry, a field at the nexus of mental health, data analysis, and technology.

Despite the widespread prevalence of mental health issues, most individuals with diagnosable conditions do not receive care due to factors like stigma, limited providers, high costs, and inconvenience. Digital treatments address these challenges by providing evidence-based interventions at scale, ensuring privacy, convenience, and affordability. Continuous data collection through smartphone and wearable sensors provides insight into real-time mental health fluctuations. This allows for interventions during periods of heightened risk, such as during instances of suicidal ideation, when traditional care models may not effectively respond in-time. The field is poised for a shift towards technology-driven, personalized, and predictive mental healthcare. My research focuses on the development and evaluation of these methods, aiming to enhance support for those with mental health challenges.

My research centers on the use of intensive longitudinal data and digital interventions to study anxiety and depressive disorders. By developing smartphone applications, I have collected passive mobile sensing data from over 10,000 participants across more than 100 countries, including hourly assessments of anxiety and depressive symptoms in subjects with generalized anxiety and social anxiety disorders. A cornerstone of my research is personalized models, which are machine learning constructs tailored to an individual's time series data. These models analyze the relationship between symptoms, captured via ecological momentary assessments (e.g., intensive measurements of real-time self-reports of mental health symptoms repeatedly within the context of free-living conditions) and passive sensing data elements such as social interactions, application usage patterns, GPS locations, ambient light conditions, and movement patterns. Feedback from these models has shown reductions in anxiety and depressive symptoms, improved heart rate variability, increased social contact, and enhanced physical activity. However, creating personalized models presents challenges due to the nature of time series data and the intricacies of training algorithms on individual datasets. To address this, I have developed time series modeling techniques, including methods to determine when time series data optimally predict one another, and personally weighted deep learning models. These methods help in understanding the relationships between variables and allow for more accurate predictions and interventions. Utilizing this approach, my aim is to provide insights into mental health dynamics and inform more tailored interventions.

Over the past five years, my research program has produced 27 publications with a primary focus on using **passively collected sensor data to achieve four objectives: (1) detect psychiatric disorders, (2) measure disorder severity, and predict both (3) long-term and (4) short-term changes in mental health.** Specifically, my work centers on creating digital biomarkers of mood and anxiety disorders using machine learning models. Digital biomarkers refer to specific measurements and indicators derived from digital technology, such as smartphone sensors, wearable sensors, electronic health record data, internet search data, and social media data, used to detect disorders, measure severity, and predict changes in mental health. By employing smartphone sensors, wearable sensors, electronic health record data, internet search data, and/or social media data, my research has demonstrated that machine learning models can: (1) distinguish people with major depressive disorder, posttraumatic stress disorder, and generalized anxiety disorder from non-disordered controls; (2) detect symptom severity of major depressive disorder, active suicidal ideation, social anxiety symptom severity, pain severity, and worry severity; and (3) detect antidepressant medication use. Additionally, I have utilized passively collected data to predict changes in symptoms of major depressive disorder over two weeks of treatment; changes in suicidal ideation, intent, and completion over several months; and deterioration of anxiety disorders over a span of 17 to 18 years. Furthermore, my research has revealed that passive smartphone and wearable sensor data can predict hour-to-hour changes in major depressive disorder, anxiety disorders, eating disorders, and overall mental health in non-disordered employees. In our analyses, my lab found that personalized models yield optimal performance. However, these models require data from specific participants for training. A primary challenge our lab addresses is determining conditions under which generalizable models can cater to a broad population and pinpointing scenarios in which individual data is essential. This involves quantifying the precise data volume needed to refine these models and aiming to minimize patient burden while maximizing utility. Collectively, my work suggests that objective digital biomarkers can provide precise assessments of psychopathology. By creating cutting-edge digital biomarkers for mood and anxiety disorders through machine learning models, my work has pioneered a new era of precise, objective assessments of psychopathology, setting the stage for a future where mental health care is both more objective, accessible, and effective.

In the past decade in 21 publications, I've focused on **developing and evaluating digital therapeutics that aim to personalize intervention delivery at scale.** Digital therapeutics refers to the use of digital tools and technologies, such as smartphone apps, to deliver evidence-based therapeutic interventions for the treatment and prevention of diseases and disorders. In particular, my co-authors and I have developed seven digital therapeutics targeting: anxiety disorders, depressive disorders, eating disorders, and/or substance use disorders, predominantly administered using smartphone apps. In randomized controlled trials, we have found evidence of differential symptom reduction in depressive symptoms, anxiety symptoms, eating disorder severity and incidence, and substance use severity. To personalize digital therapeutic treatment delivery, I use machine learning models to predict individual treatment response. I have found that I was able to accurately predict individual participant changes in major depressive disorder symptom severity, anxiety disorder symptom severity, and stress from pre- to post-intervention. As a whole, my work suggests that digital therapeutics can effectively treat and prevent mental illness, and individual treatment response can be accurately predicted to better deliver personalized medicine at scale. Given the large unmet population-level mental health needs, these digital therapeutics show great promise in addressing the treatment gap and providing scalable, personalized care to those suffering from mental illness.

Teaching

As an educator and mentor, I have taught various courses and guided students at all academic levels. My teaching philosophy emphasizes curiosity, independent thinking, and lifelong passion for learning. To date, I have served as the sole instructor for five different courses (QBS 126, QBS 270, PSYCH 238; PSYCH 301W; PSYCH 481). In Fall 2021, my class size dropped from 10 to 1 due to scheduling conflicts; after rescheduling in the spring, enrollment rose to 22. I have also given six guest lectures. In my first year at Dartmouth, I elected to co-instruct a journal club course despite my appointment letter stating that I was not required to do so. My approach to teaching and learning is grounded in the belief that: “the value of an education ... is not the learning of many facts, but the training of the mind to think something that cannot be learned from textbooks.” (Albert Einstein). I seek to empower my students with the tools and knowledge they need to thrive both academically and professionally.

In addition to teaching, I have advised and mentored students and professionals across various fields, including two K award mentees, five postdoctoral students, four PhD students, six master's students, two medical residents, five research assistants/research coordinators, and well over 100 undergraduates. I have found immense joy in supporting and guiding students through the challenges of their academic and professional paths, helping them to realize their goals and develop the skills they need to succeed. My mentorship has helped students publish research, secure fellowships, and attain top employment positions. One particularly rewarding aspect of my work has been my involvement with Undergraduate Research Assistantships at Dartmouth (URAD) programs, which provide opportunities for undergraduate students to engage in cutting-edge research across a range of fields. As a mentor in these programs, I have supported 38 students in pursuing their research interests and developing their skills, providing them with guidance and feedback every step of the way. Seeing the enthusiasm and dedication of these students has been one of the highlights of my career, and I am constantly inspired by their curiosity and drive.

Service

I actively serve the academic community at Dartmouth, believing in the importance of community contribution. I've served on the PhD and MS admissions committees for the Quantitative Biomedical Science programs and as a site lead at the Center for Technology and Behavioral Health, where I interview and evaluate candidates for the Psychiatry Research Track Residency program. As a member of these committees, I have had the opportunity to work with a diverse group of applicants from around the world and to help select the next generation of scholars in the field. As a member of the Geisel Faculty Council, I act as a liaison between the faculty and the Dean's office, providing input and feedback on policies and procedures. Finally, I have served on three faculty search committees, chairing one, and helped to recruit top talent for four positions, from junior to senior levels.

Summary

Now entering my fifth year at Geisel, I have published 96 peer-reviewed publications (the vast majority first or senior authored), 6 book chapters, and served as lead editor on a book. As a PI, I have secured over \$3.3 million in funding, and as a co-I, I have secured over \$20 million. I have been invited to present my work locally, nationally, and internationally. This work has been accomplished in mentored collaboration with over 100 trainees across all levels. Moreover, I play an active role in serving the Dartmouth community, participating in two graduate admissions committees, three faculty search committees, and serving on the faculty council. Beyond these metrics, the promise and impact of my work lie in revolutionizing mental health care through innovative, scalable, and personalized approaches that have the potential to transform lives and address the pressing global mental health crisis.