

**SARAH H. HEIL
CURRICULUM VITAE**

Position: Professor with Tenure
Vermont Center on Behavior and Health
Department of Psychiatry (primary)
Department of Psychological Science (secondary)

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EDUCATION

1999-2002	University of Vermont (Stephen T. Higgins, Ph.D.)	Postdoctoral fellow	National Institute on Drug Abuse (NIDA) Training Grant
1997-1999	Wayne State University (Marappa G. Subramanian, Ph.D.)	Postdoctoral fellow	National Institute on Alcohol Abuse and Alcoholism (NIAAA) Training Grant
1992-1997	Dartmouth College (Catherine P. Cramer, Ph.D.)	Ph.D.	Research Assistant (1992-1997)
1988-1992	Wittenberg University (Josephine F. Wilson, Ph.D.)	B.A.	Phi Beta Kappa; Research Assistant (1991-1992)

LICENSES, CERTIFICATION

2021 – 2023 One Key Question certification

FACULTY POSITIONS HELD

Years	Institution	Academic Title	Department
2018 – present	University of Vermont	Professor	Psychiatry Psychological Science
2016 - 2018	University of Vermont	Associate Professor with Tenure	Psychiatry Psychological Science

2014 - 2016	University of Vermont	Associate Professor	Psychiatry Psychological Science
2009-2014	University of Vermont	Research Associate Professor	Psychiatry Psychological Science
2006-2009	University of Vermont	Research Assistant Professor	Psychological Science
2003-2009	University of Vermont	Research Assistant Professor	Psychiatry

OTHER POSITIONS AND MAJOR ADMINISTRATIVE POSITIONS HELD

Years	Location/program name	Role
2021-present	National Institute on Drug Abuse, Food and Drug Administration Tobacco Center of Regulatory Science (P50 DA036114)	Associate Director
2019-present	Health Resource and Services Administration, Rural Center of Excellence on Substance Use Disorders	Associate Director
2014-present	National Institute on Drug Abuse, Food and Drug Administration Tobacco Center of Regulatory Science training program (P50 DA036114)	Associate Director
2013-present	National Institute on Drug Abuse training program (T32 DA07242)	Associate Director

Across both training programs, serve as:

- Coordinator of predoctoral and postdoctoral recruitment (currently 13 positions)
- Liaison with Department of Psychological Science to coordinate predoctoral fellow training (currently 7 students)

HONORS AND AWARDS

Year	Name of Award
1995	Sandra G. Wiener Developmental Psychobiology Student Investigator Award
2003	National Institute on Drug Abuse Women and Gender Junior Investigator Travel Award
2011	Elected Fellow in Division 28 (Psychopharmacology and Substance Abuse) of the American Psychological Association
2015	Elected Fellow in Division 50 (Society of Addiction Psychology) of the American Psychological Association
2016	Recipient of inaugural University of Vermont College of Medicine Dean's Excellence in Research Award at the Associate Professor level
2023	University of Vermont University Scholar

KEYWORDS/AREAS OF INTEREST

Substance-related disorders, pregnancy, postpartum period, cigarette smoking, nicotine withdrawal, opioids, neonatal abstinence syndrome, contraception

SUMMARY OF PROFESSIONAL ACTIVITIES- OVERALL

I joined the Psychiatry faculty in 2003 as a Research Assistant Professor and was promoted to Research Associate Professor in 2009. Consistent with this, my focus initially was primarily on research, but I steadily and significantly increased my teaching and service responsibilities over the years while maintaining a high level of productivity in research. This set the stage for my transition to the Tenure Pathway in January of 2014 with tenure granted in 2016. I was promoted to Professor in 2018. Overall, in my 19 years as a faculty member, I have obtained 7 grants as sole Principal Investigator (PI), including 4 R01s, worth \$10 million in extramural funds. I have also worked successfully with others to obtain NIH grants as a Co-PI (\$8 million) and Co-Investigator (\$56 million). I have published more than 130 manuscripts in peer-reviewed scientific journals which have been cited nearly 6,000 times and result in a current ISI Web of Science h-index of 39. I present my research at 2-3 national and international peer-reviewed scientific meetings annually and have also been invited to present my work to prestigious groups (e.g., Johns Hopkins Behavioral Pharmacology Research Seminar Series; Expert Meeting on Perinatal Illicit Substance Abuse at the Centers for Disease Control and Prevention; Norwegian Centre for Addiction Research at the University of Oslo). I also serve as Associate Director of a \$17 million Health Resources and Services Administration Regional Center of Excellence that disseminates evidence-based services and resources in rural northern New England. In terms of professional service, I am a consistently active member of the College of Problems of Drug Dependence, the longest standing group in the US addressing problems of drug dependence and abuse. I have served on a number of committees and the board of directors for this organization and am currently a Fellow. I have also been active in the American Psychological Association as an elected Fellow of two divisions (Division 28 Substance Abuse and Psychopharmacology and Division 50 Society of Addiction Psychology) and as a member of the consulting editorial board of the journal of each division. I am an ad hoc reviewer for more than 30 other scientific journals. I have served as an ad hoc reviewer on NIH study sections and was a permanent member of the Interventions to Prevent and Treat Addictions Standing Study Section. My service work also includes being appointed by the governor to the Vermont Tobacco Evaluation and Review Board, joining the medical advisory board of Planned Parenthood of Northern New England, serving as an expert discussant for the Vermont Oxford Network's initiative to address controversies in caring for infants exposed to opioids prenatally and their families, and being appointed to the Vermont Maternal Mortality Review Panel. With regard to teaching, I have served as the primary mentor and advisor for 13 pre- and postdoctoral fellows as part of our two federally funded training programs. As Associate Director of these training programs, I also oversee all recruitment for the 13 training positions. I have served on more than 20 second year project, Master's, preliminary exam, and doctoral committees for many students, am regularly asked to lecture in undergraduate, graduate, medical student, and resident courses at the University of Vermont, have been invited to give more than 20 CE/CME presentations throughout the US, and frequently collaborate with colleagues on chapters in textbooks and handbooks (e.g., Barlow's Clinical Handbook of Psychological Disorders).

SUMMARY OF ACCOMPLISHMENTS

- \$10 million in NIH funding as PI, another \$8 million as Co-PI, and an additional \$56 million as Co-I; continuously funded since 2004
- More than 130 publications to date cited nearly 6,000 times; ISI Web of Science h-index=39

- High-impact research includes a report in New England Journal of Medicine (see Jones, Kaltenbach, Heil et al., 2010); results have influenced international practice guidelines in US, Australia, Denmark, Norway, Sweden and other countries
- Invited presentations to prestigious groups (e.g., Centers for Disease Control and Prevention's Expert Meeting; Johns Hopkins Research Seminar Series)
- Significant service, including election to board of directors of College on Problems of Drug Dependence, oldest and largest organization dedicated to advancing the scientific study of substance use, and other professional organizations; current Fellow
- Service to NIH as permanent and ad hoc reviewer for multiple study sections; also on editorial boards of Psychology of Addictive Behaviors and Experimental and Clinical Psychopharmacology and serve as an ad hoc reviewer for more than 30 journals, including New England Journal of Medicine, JAMA
- Associate director of two federally-funded research training programs; oversee recruitment for 13 positions and have served as primary mentor for eight pre- and postdoctoral fellows
- Elected fellow in two divisions of American Psychological Association

PROFESSIONAL SERVICE

DEPARTMENTAL SERVICE

Years	Department		
2009-present	Psychiatry	Faculty Review Committee	Member
2010-2013	Psychiatry	University Faculty Senate	Elected Representative
2021-2022	Psychiatry	Chair Search Committee	Appointed Member

COLLEGE SERVICE

Fall 2010	Vermont Child Health Improvement Program		Reviewed and commented on their guidelines "Management of Neonatal Opioid Withdrawal"
2012-2014	Faculty Standards Committee		Elected Member
2016-2018	Research Incentive Program Working Group		Appointed Member
Fall 2017	Reappointment, Promotion, and Tenure Mentoring Group		Served on panel discussing how to prepare for RPT
Fall 2017	Ad Hoc Review Committee for Faculty Research and Mentorship Awards		Reviewed nominations for four research awards
2019	LCME Self-Study Sub-Committee for Standard 2: Leadership and Administration		Appointed Member

MEDICAL CENTER SERVICE

Not applicable

UNIVERSITY SERVICE

2003-present	Graduate College	Member
2008-2010	General Clinical Research Center Scientific Advisory Committee	Member
Spring 2013	Undergraduate Research Mini-Grants	Reviewer
Summer 2013	Undergraduate Research Grants	Reviewer
Winter 2021	Vermont Biomedical Research Network Faculty Research Grant	Reviewer

GOVERNMENT**State**

2011-2013	Vermont Tobacco Evaluation and Review Board	Appointed Member
2015-2019	Vermont Maternal Mortality Review Panel	Appointed Member

Federal

2007	National Institutes of Health	Member, Special Emphasis Panel on Specialized Centers of Interdisciplinary Research on Sex and Gender Factors Affecting Women's Health
2011	National Institute on Drug Abuse	Member, Protocol Review Board for Clinical Trials Network
2011	National Institutes of Health	Member, Special Emphasis Panel/Scientific Review Group 2012/01 ZRG1 RPHB-P (90) A Academic Research Enhancement Awards (AREA) R15 Review Group
2013	National Institutes of Health	Member, National Institute of General Medical Sciences (NIGMS) Special Emphasis Panel ZGM1 TWD-C(C1) Centers of Biomedical Research Excellence (COBRE) P20 Review Group
2014	National Institutes of Health	Member, Scientific Review Group 2014/10 ZRG1 RPIA-N-09 F Risk, Prevention and Intervention for Addictions Overflow Review Group
2014	National Institutes of Health	Member, Scientific Review Group 2015/01 ZRG1 RPIA-N-09 F Risk, Prevention and Intervention for Addictions Overflow Review Group
2015-2019	National Institutes of Health	Charter Member, Interventions to Prevent and Treat Addictions Study Section, Center for Scientific Review; Co-Chair for October 2016 meeting

2016	National Institutes of Health	Chair, Scientific Review Group 2016/05 ZRG1 RPHB-U (90) S Interventions to Prevent and Treat Addictions Review Group
2022	National Institutes of Health	Member, Scientific Review Group 2022/05 CHHD-B B Obstetrics and Maternal-Fetal Biology Study Section

SOCIETY MEMBERSHIPS

1992 - present	Phi Beta Kappa	
1996 - present	Sigma Xi; Associate Member	
2003 - present	College on Problems of Drug Dependence; Fellow	
2003 - present	American Psychological Association Division 50 - Society of Addiction Psychology (2004-present; Fellow) Division 28 - Psychopharmacology and Substance Abuse (2006-present; Fellow)	
2005 - present	Society for Research on Nicotine and Tobacco; Full Member	
2016 - present	Society for Family Planning; Full Fellow	

SERVICE TO PROFESSIONAL ORGANIZATIONS

2001	American Psychological Association	Program Committee for Division 28
2001	College on Problems of Drug Dependence	Liaison for community-based treatment providers attending the annual research conference
2002	American Psychological Association	Program Committee for Division 28
2002	College on Problems of Drug Dependence	Liaison for community-based treatment providers attending the annual research conference
2003	College on Problems of Drug Dependence	Liaison for community-based treatment providers attending the annual research conference
2004-2006	College on Problems of Drug Dependence	Appointed member, Human Research Committee
2006	American Psychological Association	Program Committee for Division 28
2007-2010	College on Problems of Drug Dependence	Appointed chair, Human Research Committee
2012-2015	College on Problems of Drug Dependence	Appointed member, Awards Committee
2013	Sigma Xi	Grants-in-Aid of Research Review Panel
2014	Sigma Xi	Grants-in-Aid of Research Review Panel
2014-2018	College on Problems of Drug Dependence	Elected member, Board of Directors

2015 Sigma Xi

Grants-in-Aid of Research Review Panel

SERVICE TO PROFESSIONAL PUBLICATIONS

2014-2019	Psychology of Addictive Behaviors	Consulting Editorial Board
2019-2023	Experimental and Clinical Psychopharmacology	Consulting Editorial Board

- Ad hoc reviewer for more than 30 journals, including: Addiction, Addictive Behaviors, Alcohol, Alcoholism: Clinical and Experimental Research, The American Journal of Drug and Alcohol Dependence, The American Journal of Obstetrics and Gynecology, The American Journal of Psychiatry, The American Journal on Addictions, Archives of General Psychiatry (now JAMA Psychiatry), CNS Drugs, Contraception, Drug and Alcohol Dependence (rated in the top 5% of ~900 reviewers in 2010), Drugs, European Journal of Obstetrics and Gynecology and Reproductive Biology, Experimental and Clinical Psychopharmacology, JAMA, Journal of Applied Behavior Analysis, Journal of Addiction Medicine, Journal of Consulting and Clinical Psychology, Journal of Maternal-Fetal and Neonatal Medicine, Journal of Pediatrics, Journal of Studies on Alcohol and Drugs, Journal of Substance Abuse Treatment, Journal of the International Neuropsychological Society, Journal of Women's Health, New England Journal of Medicine, Nicotine and Tobacco Research, Pediatrics, Pharmacology Biochemistry and Behavior, Preventive Medicine, Psychology of Addictive Behaviors, Psychopharmacology, Substance Use and Misuse, and Translational Issues in Psychological Science

OTHER:

- Invited by the New England Journal of Medicine to serve as an expert for a 10-day online interactive discussion (NEJM Group Open Forum) about an NEJM article on increasing neonatal abstinence syndrome in US neonatal intensive care units (Tolia et al., 2015); posts viewed by more than 1,000 participants
- Invited mail reviewer of grant application in my area of expertise for Glasgow Children's Hospital Charity Research Fund (October 2016)

PUBLIC SERVICE

2012-2014	Planned Parenthood of Northern New England	Medical Advisory Board
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SUMMARY OF SERVICE ACTIVITIES

I have pursued numerous service opportunities throughout my time as a faculty member. I have served on committees at the department, college, and university level, including serving on my department's Faculty Review Committee, representing my department on the Faculty Senate, and being elected to the College of Medicine Faculty Standards Committee. Related to my discipline, I have served professional organizations of which I am a member, such as being elected to the board of directors of the College on Problems of Drug Dependence. I have also served as a reviewer on NIH study sections including serving as a permanent member of a standing study section. I am also a reviewer for more than 30 scientific journals, including high-impact journals like New England Journal of Medicine, JAMA, JAMA Psychiatry, and Journal of Consulting and Clinical Psychology and currently serve on the consulting editorial board of the journal Experimental and Clinical Psychopharmacology. Other service includes appointment by the governor to the Vermont Tobacco Evaluation and Review Board, membership on the medical advisory board of Planned Parenthood of Northern New England, and appointment to the Vermont Maternal Mortality Review Panel.

TEACHING**FORMAL SCHEDULED CLASSES**

Year	Course Title	Course R E		Hours	Number of Learners	Learner Level
2003-2013	Trainee Journal Club	x		1 weekly	8-16	Graduate and Postdoctoral
2007	Selected Topics on Substance Use Disorders (PSYC 380)		x	4	7	Graduate
2011	Selected Topics in Behavior, Neurobiology, & Health (PSYC 380)		x	4	7	Graduate
2013	Reporting Clinical Research (CTS 315)	x		1	2	Graduate
2014	Reporting Clinical Research (CTS 315)	x		1.5	4	Graduate
2014	Addressing Substance Abuse in Social Work (SWSS 380)		x	1.5	5	Undergraduate
2014	Neural Science (MD 577)	x		1	100	Medical Student
2015	Addressing Substance Abuse in Social Work (SWSS 380)		x	1.5	12	Undergraduate
2015	Psychopharmacology (PSYC 223; Sect. A)		x	0.75	27	Undergraduate and Graduate
2015	Psychopharmacology (PSYC 223; Sect. B)		x	0.75	40	Undergraduate and Graduate
2015	Neural Science (MD 577)	x		1	100	Medical Student
2016	Addressing Substance Abuse in Social Work (SWSS 380)		x	1.5	18	Undergraduate
2016	Neural Science (MD 577)	x		1	100	Medical Student
2017	Neural Science (MD 577)	x		1	100	Medical Student

POSTGRADUATE AND OTHER COURSES

Year	Course Title	Course R E		Hours	Number of Learners	Learner Level
2003-present	Trainee Journal Club	x		1 weekly	8-16	Graduate and postdoctoral
2006	Department of Psychiatry Substance Abuse Seminar	x		1.5	3	Resident
2008	Department of Psychiatry Substance Abuse Seminar	x		1.5	7	Resident
2009	Department of Psychiatry Substance Abuse Seminar	x		1.5	4	Resident

2010	Department of Psychiatry Substance Abuse Seminar	x		1.5	3	Resident
2014	Department of Psychiatry Substance Abuse Seminar	x		1.25	10	Graduate and Resident

OTHER:

- Resident Teaching Session, Department of Obstetrics and Gynecology, University of California San Francisco General Hospital. Sat on a panel with two UCSF providers and answered questions from ~15 residents about treating opioid-dependent pregnant women (October 2011).

PREDOCTORAL STUDENTS SUPERVISED OR MENTORED

Dates	Name	Program School	Role	Current Position
2008 - 2013	Evan Herrmann	Psychological Science, University of Vermont	M.A. Advisor Ph.D. Advisor	Health Scientist Administrator, National Institute on Drug Abuse
2013 - 2018	Cecilia Bergeria	Psychological Science, University of Vermont	M.A. Advisor Ph.D. Advisor	Assistant Professor, Johns Hopkins University
2014 - 2020	Heidi Melbostad	Psychological Science, University of Vermont	M.A. Advisor Ph.D. Advisor	Director, Chittenden Clinic Opioid Treatment Program, Burlington, VT
2015	Tara Higgins	College of Medicine University of Vermont	Scholarly Project Co-Advisor	Attending Physician, University of Pittsburgh Medical Center
2018 – 2019	Gena Zollman	Nursing, University of Vermont	Scholarly Project Co-Advisor	Nurse Practitioner, Planned Parenthood of Northern New England
2018 – present	Roxanne Harfmann	Psychological Science, University of Vermont	M.A. Advisor Ph.D. Advisor	

OTHER:

Undergraduate students supervised

- Samantha Heller, '10, supervised her Psychological Science Independent Study project for Fall 2008
- Mariel Golden, '15, supervised her Undergraduate Spring 2012 Mini Research Grant project

DISSERTATION/THESIS COMMITTEE MEMBERSHIP

Dates	Name	Program School	Role
2003 - 2004	Matt Johnson	Psychological Science, University of Vermont	Ph.D. Thesis Committee (Chair)

2003 - 2004	Jennifer Lussier Plebani	Psychological Science, University of Vermont	Ph.D. Thesis Committee (Chair)
2006	Laura Chivers	Psychological Science, University of Vermont	M.A. Thesis Committee
2008 - 2009	Kelly Dunn	Psychological Science, University of Vermont	Preliminary Project Committee Ph.D. Thesis Committee
2008 - 2012	Matt Bradstreet	Psychological Science, University of Vermont	M.A. Thesis Committee Preliminary Project Committee Ph.D. Thesis Committee
2011 - 2014	Mollie Patrick	Psychological Science, University of Vermont	M.A. Thesis Committee Preliminary Project Committee Ph.D. Thesis Committee
2012 - 2014	Alexa Lopez	Psychological Science, University of Vermont	M.A. Thesis Committee Preliminary Project Committee Ph.D. Thesis Committee
2015 – 2019	Ivori Zvorsky	Psychological Science, University of Vermont	Second Year Project Committee Ph.D. Thesis Committee
2015 - 2016	Joanna Streck	Psychological Science, University of Vermont	Second Year Project Committee
2017 - 2019	Taylor Ochalek	Psychological Science, University of Vermont	M.A. Thesis Committee Preliminary Exam Committee Ph.D. Thesis Committee
2017 - 2018	Danielle Davis	Psychological Science, University of Vermont	Preliminary Exam Committee Ph.D. Thesis Committee
2020	Carolyn Evemy	Psychological Science, University of Vermont	M.A. Thesis Committee

OTHER:

- Served as invited “first opponent” in Dr. Gabrielle Welle-Strand’s dissertation defense at the Norwegian Centre for Addiction Research, Oslo University, Oslo, Norway (October 2015)
- Served as external examiner for a dissertation by a PhD student at the University of Newcastle, Callaghan NSW, Australia

POSTDOCTORAL FELLOWS AND RESIDENTS DIRECTLY SUPERVISED OR MENTORED

Dates	Name	Fellow	Faculty Role	Current Position
2006 - 2009	Teresa Linares Scott, Ph.D.	Postdoctoral Fellow	Research Supervisor	Clinical Assistant Professor, University of Vermont
2010 - 2012	Diann Gaalema, Ph.D.	Postdoctoral Fellow	Research Supervisor	Research Associate Professor, University of Vermont
2012 - 2015	Dennis Hand, Ph.D.	Postdoctoral Fellow	Research Supervisor	Research Associate Professor, Thomas Jefferson University

2014 - 2017	Chris Arger, Ph.D.	Postdoctoral Fellow	Research Supervisor	Clinical Psychologist, Sepsis Psychology and Counseling Services
2015 – 2017	Alexis Matusiewicz, Ph.D.	Postdoctoral Fellow	Research Supervisor	Parental leave
2017 – 2020	Catalina Rey, Ph.D.	Postdoctoral Fellow	Research Supervisor	Assistant Professor, University of Nebraska Medical Center
2019 – 2021	Anthony Oliver, Ph.D.	Postdoctoral Fellow	Research Supervisor	Associate Director, Clinical Development, Digital Therapeutics, atai Life Sciences
2020 - 2021	Heidi Melbostad, Ph.D.	Postdoctoral Fellow	Research Supervisor	Director, Chittenden Clinic Opioid Treatment Program, Burlington, VT
2022 – present	Loren Kock, PhD	Postdoctoral Fellow	Research Supervisor	
2023 - present	Meredith Gamble, PhD	Postdoctoral Fellow	Research Supervisor	

CE/CME TEACHING

1. Heil, S.H. (December 2005). Smoking cessation during pregnancy. Participated in workshop, “Managing Pregnant Patients who have Tobacco and Opioid Dependence: Behavioral and Pharmacotherapy Advances” (H.E. Jones, chair) held at the 16th annual meeting of the American Academy of Addiction Psychiatry in Scottsdale, AZ (CME).
2. Heil, S.H. (July 2006). Contingency management to promote smoking cessation and prevent relapse among pregnant women. Invited presentation, 2006 National Conference on Women, Addiction, and Recovery: News You Can Use, sponsored by SAMSHA-NIDA-NIAAA in Anaheim, CA (CE).
3. Heil, S.H. (December 2008). Smoking cessation during pregnancy. Participated in symposium, “Pregnant Women Using Opioids: Update on Clinical Treatment and Research” (S. Stine, chair) held at the 19th annual meeting of the American Academy of Addiction Psychiatry in Boca Raton, FL (CME).
4. Heil, S.H. (October 2011). Opioid dependence during pregnancy: Improving neonatal and maternal outcomes. University of California San Francisco General Hospital Medicine Grand Rounds, San Francisco, CA (CME).
5. Heil, S.H. (October 2011). Opioid dependence during pregnancy: Improving neonatal and maternal outcomes. University of California San Francisco General Hospital OB/GYN Grand Rounds, San Francisco, CA (CME).
6. Heil, S.H. (March 2011). Contingency management: Why it works and the latest research. Invited workshop, Vermont Addictions Professionals Association, Colchester, VT (CE).
7. Heil, S.H. (April 2011). Opioid dependence during pregnancy: Improving neonatal and maternal outcomes. University of Vermont Psychiatry Grand Rounds, Burlington, VT (CME).
8. Heil, S.H. (April 2012). Prenatal care for opioid-dependent pregnant women. Participated

- in symposium, “Prenatal Care and Neonatal Withdrawal Approaches in Opiate Dependence” (A. Paredes, J. Khalsa, chairs) at the 43rd Annual Medical-Scientific Conference of the American Society of Addiction Medicine, Atlanta, GA (CME).
9. Heil, S.H. and Higgins, S.T. (May 2012). Smoking cessation strategies during pregnancy. University of Vermont College of Medicine Women’s Health Conference, Burlington, VT (CME).
 10. Heil, S.H. (August 2012). Medications to treat opioid dependence and withdrawal in pregnant women and their infants. Participated in session, “Medications to treat opioid withdrawal and dependence in neonates, adolescents, pregnant women & adults” (E. Winstanley, organizer) at the Addiction Studies Institute, Columbus, OH (CE).
 11. Heil, S.H. (March 2014). Research on opioids and the maternal/neonatal dyad: Data from controlled trials and the real world. Presented at the 15th Annual NeoFest, University of Cincinnati, Cincinnati, OH (CME).
 12. Heil, S.H. (June 2014). Exploring the next generation of scoring: Innovative tools and techniques. Vermont Oxford Network iNICQ 2014 Structuring Success in the Care of Infants and Families Affected by Neonatal Abstinence Syndrome webinar series (CME).
 13. Heil, S.H. (September 2014). Understanding the psychosocial context. Vermont Oxford Network iNICQ 2014 Structuring Success in the Care of Infants and Families Affected by Neonatal Abstinence Syndrome webinar series (CME).
 14. Heil, S.H. (February 2015). Opioid dependence during pregnancy: Improving outcomes. Dartmouth Psychiatric Research Center Seminar, Dartmouth College, Lebanon, NH (CME).
 15. Heil, S.H. (March 2015). Continuing efforts to improve results among pregnant cigarette smokers: Primary outcomes and secondary analyses. Keynote speaker at University of North Carolina Horizons 11th annual conference, The Art of Women Working Recovery, University of North Carolina, Chapel Hill, NC (CME).
 16. Heil, S.H. (March 2015). Meeting the reproductive health care needs of women in treatment for substance use disorders. Workshop presentation at University of North Carolina Horizons 11th annual conference, The Art of Women Working Recovery, University of North Carolina, Chapel Hill, NC (CME).
 17. Heil, S.H. (December 2015). Methadone and buprenorphine for opioid dependence during pregnancy: A retrospective cohort study. Participated in symposium, “The Use of Medication to Treat Opioid Dependence During Pregnancy” (K. Kaltenbach, chair) at the 26th Annual Meeting and Scientific Symposium of the American Academy of Addiction Psychiatry, Huntington Beach, CA (CME).
 18. Heil, S.H. (September 2017). Improving effective contraceptive use among opioid-maintained women at risk for unintended pregnancy. Presented at the Patient Centered Medical Home/Neighborhood Learning Collaborative, St. Albans, VT (CE).
 19. Heil, S.H., Matusiewicz, A.K., Melbostad, S.C., Sigmon, S.C., Badger, G.J., MacAfee, L.K., Rey, C., & Higgins, S.T. (March 2018). Increasing effective contraceptive use among opioid-maintained women at risk for unintended pregnancy. Presented in symposium at the 2nd Annual Women in Behavior Analysis Conference, Nashville, TN (CE).
 20. Heil, S.H. (March 2019). Research on opioids and the maternal/neonatal dyad.

Presentation at the Center for Technology and Behavioral Health, Dartmouth College, Lebanon, NH (CME).

21. Heil, S.H. (September 2021). Improving outcomes among opioid-exposed neonates. Presented at the 5th Vermont Association of Women's Health, Obstetrics, and Neonatal Nursing Section Conference, Burlington, VT (CE).

INFORMAL TEACHING

1. Heil, S.H. (April 2002). The science of addiction. Drug Awareness Day, Burlington High School, Burlington, VT.
2. Heil, S.H. (November 2007). The MOTHER Study: Current progress. Invited in-service presentation, Labor and Delivery Unit, Fletcher Allen Health Care, Burlington, VT.
3. Heil, S.H. (May 2009). Promoting smoking cessation during pregnancy and postpartum. Invited presentation, Maternal Child Health Coalition, Fletcher Allen Health Care, Burlington, VT.
4. Heil, S.H. (March 2010). Financial incentives for increasing breastfeeding. Invited presentation, Maternal Child Health Coalition, Fletcher Allen Health Care, Burlington, VT.

FACULTY MENTORED

Dates	Name	Position While Mentored	Faculty Role	Current Position
2016-present	Anne M. Dougherty, M.D.	Clinical Assistant Professor, OB/GYN University of Vermont	Research Collaborator and Mentor	Clinical Associate Professor, OB/GYN University of Vermont

OTHER VISITING FACULTY SUPERVISED

Not applicable

TEACHING AIDS

Not applicable

TEACHING AWARDS AND NOMINATIONS

Not applicable

SUMMARY OF TEACHING ACTIVITIES

My teaching responsibilities lie primarily in mentoring. As a member of the training faculty on our National Institute on Drug Abuse (NIDA) T32 Training Grant in drug abuse research and more recently, our FDA/NIDA P50 Tobacco Center on Regulatory Science training program, I serve as the primary mentor and advisor for pre- and postdoctoral fellows, now totaling 13. In this role, I meet regularly with each trainee to discuss scholarly readings and ongoing clinical research projects. I support trainee professional development through various activities including co-authoring and co-reviewing manuscripts for peer-reviewed scientific journals and textbooks, analyzing and discussing research data, preparing data presentations for professional meetings, and providing them with opportunities to serve various professional/scientific organizations. I have also participated in a weekly behavioral pharmacology journal club with our trainees and serve on other students' second year project, Master's, preliminary examination and dissertation committees. To more broadly support our educational mission, I also serve as Associate Director of the T32 and P50 training programs, overseeing all recruitment for the 13 pre- and postdoctoral

training positions and coordinating with the Department of Psychological Science on predoctoral fellow training.

Regarding classroom teaching, I have co-taught a biobehavioral seminar for graduate students in the Department of Psychological Science and a seminar on substance abuse for Psychiatry residents. I am also frequently invited to give lectures on topics related to substance abuse and treatment to undergraduate, graduate, and medical students.

I have also been invited to give more than 15 CE/CME presentations locally, regionally, and nationally, including the UVM College of Medicine's Women's Health Conference, the Dartmouth Psychiatric Research Center Seminar, and Grand Rounds at University of California San Francisco General Hospital.

Additionally, in order to disseminate scientific knowledge on drug abuse and treatment, I have given presentations to a broad range of non-academic audiences in the community, such as Burlington High School students on Drug Awareness Day, Fletcher Allen Maternal Child Health Coalition meetings, and statewide meetings of VCHIP's Improving Care for Opioid-exposed Neonates (ICON) project. I have also been a co-author on a number of contributions to textbooks, handbooks, and encyclopedias in the field (see pgs. 32-34).

RESEARCH AND SCHOLARLY ACTIVITIES

RESEARCH AWARDS AND GRANTS

Ongoing Research Support

R01DA047867 Heil (Co-PI) 07/15/18-03/31/23

National Institute on Drug Abuse

(Originally R01HD096780 through National Institute of Child Health and Human Development)

Medically-supervised Withdrawal vs. Agonist Maintenance in the Treatment of Pregnant Women with Opioid Use Disorder: Maternal, Fetal, and Neonatal Outcomes

While opioid agonist treatment is the recommended standard of care for the treatment of opioid use disorder during pregnancy, medically-supervised withdrawal ('detoxification') is a common treatment approach in this population. The extant literature suggests a mixed picture with regards to outcomes following medically-supervised withdrawal, with generally poor maternal outcomes while neonatal outcomes appear more positive. Conclusions are further complicated by the fact that the literature is methodologically weak. The proposed study will be a multi-site, controlled, prospective, longitudinal, matched cohort study comparing maternal, fetal, and neonatal outcomes among women who choose medically-supervised withdrawal vs. opioid agonist treatment at treatment entry.

Role: Co-Principal Investigator

Total costs: \$3,331,579 through 2022

P50DA036114, U54DA036114 Higgins (PI) 09/01/13-05/31/24

National Institute on Drug Abuse and Food and Drug Administration

University of Vermont Tobacco Center on Regulatory Science

The prevalence of smoking remains high among individuals with concomitant other vulnerabilities (e.g., substance use, affective disorders, socioeconomic disadvantage) and is associated with significant smoking-related morbidity and mortality. The UVM Tobacco Center on Regulatory Science assists the FDA Center for Tobacco Products mission by investigating the impacts of tobacco product use on addiction, behavior, and health biomarkers and outcomes in vulnerable populations. A primary focus of this center is on investigating the effects of extended exposure to reduced-nicotine cigarettes on smoking rate, toxicants, health effects, and other measures in populations of vulnerable smokers.

Roles: Center Grant Co-Investigator, Associate Director (2021-present), Principal Investigator of Project 4, Co-Principal Investigator of Project 1 (2013-2018)

Total costs: \$38,463,645 through 2022

U01DA055354 Potter, Garavan (Co-PIs) 09/30/21-06/30/26
National Institute on Drug Abuse

20/24 The HEALthy Brain and Child Development National Consortium

This second phase of the HEALthy Brain and Child Development Study will recruit a large cohort of pregnant women from regions of the country significantly affected by the opioid crisis and follow them and their children through early childhood, including structural and functional brain imaging; anthropometrics; medical history; family history; biospecimens; and social, emotional, and cognitive development. The results, linked and harmonized across many sites, will be used to better understand and ultimately prevent or attenuate the harms of prenatal and postnatal exposure to drugs or other adverse environmental conditions.

Role: Co-Investigator

Total costs: \$2,273,928 through 2022

UD9RH33633 Sigmon (Director) 09/01/19 – 08/31/28
RCORP-RCOE Center of Excellence

Agency: Health Resources & Services Administration

University of Vermont Center on Rural Addiction

The current US opioid epidemic represents one of the most devastating public health crises of our time. There is a critical need to leverage evidence-based tools to expand opioid use disorder (OUD) treatment capacity and reduce opioid-related morbidity and mortality in rural communities, which have been disproportionately impacted. With this HRSA center award we established the UVM Center on Rural Addiction to identify, translate, disseminate and implement science-based practices to address the rural OUD epidemic, as well as future substance use disorder epidemics as they emerge.

Total costs: \$20,365,920

Ongoing Educational/Training Support

T32DA07242 Higgins (PI) 07/01/08-06/30/26
National Institute on Drug Abuse

Training in Behavioral Pharmacology of Human Drug Dependence

This training program focuses on human behavioral pharmacology, which fills a unique niche in addiction research. Our fellows learn to identify basic behavioral and pharmacological processes underpinning addiction and to translate that knowledge into effective clinical interventions and policy.

Role: Mentor, Associate Director

Total costs: \$5,081,095 through 2022

P50DA036114 Higgins (PI) 09/01/13-08/31/24
National Institute on Drug Abuse and Food and Drug Administration

Research Training/Education (Core B)

The primary educational mission of the Vermont Center on Tobacco Regulatory Science (VCTRS) is to develop an exemplary predoctoral and postdoctoral training program in tobacco regulatory science, including training related to premarketing studies on the addictiveness and adverse health effects of new tobacco products among vulnerable populations.

Role: Mentor, Associate Director

Total costs: \$5,291,907 through 2022

Completed Research Support

UD9RH33633
Health Resources and Services Administration Sigmon (Director) 09/01/19 – 08/31/23

The Regional Centers of Excellence in Substance Use Disorder Education Program

The current US opioid epidemic represents one of the most devastating public health crises of our time. There is a critical need to leverage evidence-based tools to expand opioid use disorder (OUD) treatment capacity and reduce opioid-related morbidity and mortality in rural communities, which have been disproportionately impacted. This award establishes the University of Vermont Center on Rural Addiction (UVM CORA) which seeks to identify, translate, disseminate and implement science-based practices to address the rural OUD epidemic, as well as future substance use disorder epidemics as they emerge.

Role: Associate Director

Total costs: \$17,032,587

R01DA036670

Heil (PI)

07/01/14–05/31/22

National Institute on Drug Abuse

Improving Effective Contraceptive Use Among Opioid-Maintained Women: Stage II

This study will more fully test a contraceptive management intervention that aims to increase use of more effective contraceptives among opioid-maintained women. The proposed project will dismantle the intervention to examine the contribution of each component and will further our overarching goal of developing an efficacious, empirically based contraceptive management program that can be disseminated to drug treatment facilities throughout the country.

Role: Principal Investigator

Total costs: \$2,963,874

R01DA42790

Sigmon (PI)

09/01/17-07/31/22

National Institute on Drug Abuse

Interim Buprenorphine Treatment to Bridge Waitlist Delays: Stage II Evaluation

We have developed a novel Interim Buprenorphine Treatment that leverages pharmacotherapy, state-of-the-art technology and rigorous methodology to bridge existing delays in treatment access. In an initial NIH-funded R34 randomized pilot study, we demonstrated reductions in illicit opioid use and risk behaviors among waitlisted opioid abusers receiving IBT. This project will seek to replicate those highly promising results while simultaneously evaluating generality of our findings to additional rural settings outside our single academic medical center.

Role: Co-Investigator

Total costs: \$3,005,932

R34DA050283

Heil (Co-PI)

09/30/19-03/31/21

National Institute on Drug Abuse

(Originally R34HD101037 through National Institute of Child Health and Human Development)

Site 3 of 4, Investigation of Opioid Exposure and Neurodevelopment (iOPEN)

Understanding the consequences of early exposure to illicit substances on the developing brain has increased dramatically given the current opioid epidemic. This proposal lays a foundation for a large-scale effort to address this imperative by testing strategies for recruitment and retention of high-risk pregnant women, implementing a multi-site standardized protocol to characterize brain development from the fetal period through early childhood, and evaluating strategies for improving neuroimaging data quality, usability and integration. The proposed activities, linked and harmonized across four sites, will provide critical information to support Phase II of the HEALthy Brain and Child Development Study.

Role: Co-Principal Investigator

Total costs: \$263,250

Laura and John Arnold Foundation

Sigmon (PI)

08/10/17 – 07/31/19

Interim Buprenorphine Treatment to Reduce Individual and Societal Harm during Delays to Opioid Treatment: Extended Duration

We have developed a novel Interim Buprenorphine Treatment that leverages pharmacotherapy, state-of-the-art technology and rigorous methodology to bridge existing delays in treatment access. In an initial NIH-funded R34 randomized pilot study, we demonstrated reductions in illicit opioid use and risk behaviors among waitlisted opioid abusers receiving IBT. This project will seek to replicate those highly promising results while simultaneously evaluating generality of our findings to a longer treatment duration.

Role: Co-Investigator

R01HD075669 Higgins (PI) 09/15/13–05/31/18

National Institute of Child Health and Human Development

Financial Incentives for Smoking Cessation among Disadvantaged Pregnant Women

The overarching goal is to investigate how improving smoking cessation among pregnant women may reduce health disparities. We will experimentally examine whether adding financial incentives to current best practices for smoking cessation during pregnancy increases cessation rates, birth outcomes, breastfeeding duration, and infant growth and overall health during the first year postpartum. We will conduct a cost-effectiveness analysis of incentive-based intervention. We will also include a sociodemographically comparable group of pregnant non-smokers in the study to estimate how much more cessation rates and health outcomes could be increased through use of larger monetary incentive values before exceeding cost effectiveness.

Role: Co-Investigator

Total costs: \$3,639,417

R01DA031928 Heil (PI) 09/15/12-07/31/17 (NCE)

National Institute on Drug Abuse

Testing the Reliability and Validity of Pupil Diameter in Opioid-exposed Neonates

The aim of this project is to test the reliability and discriminant, concurrent, construct, and predictive validity of pupil diameter as a measure of opioid effects in neonates exposed to opioids in utero. Establishing the reliability and validity of pupil diameter in opioid-exposed neonates has potential to substantially improve assessment and treatment of opioid-exposed neonates in both clinical and research settings, reducing morbidity, shortening hospital stays, and decreasing costs.

Role: Principal Investigator

Total costs: \$1,237,528

R34DA037385 Sigmon (PI) 04/01/14–03/31/16

National Institute on Drug Abuse

Interim Treatment: Leveraging Buprenorphine & Technology to Bridge Waitlist Delays

We propose to leverage efficacious pharmacotherapy, state-of-the-art technology and rigorous methodology to develop a novel Interim Buprenorphine Treatment that can bridge these delays in treatment access. The proposed project will produce a highly innovative technology-assisted pharmacotherapy protocol that can be widely disseminated to increase access to life-saving opioid treatment.

Role: Co-Investigator

Total costs: \$651,938

R34DA030534 Heil (PI) 08/01/11–06/30/14 (NCE)

National Institute on Drug Abuse

Improving Effective Contraceptive Use among Opioid-maintained Women

The objective of this study is to develop and pilot test an intervention that aims to promote the use of more effective contraceptives among opioid-maintained women at risk for unintended pregnancy. Development of such an intervention has the potential to reduce the vast economic and societal costs associated with unintended pregnancy among drug-dependent women.

Role: Principal Investigator

Total costs: \$603,900

R01DA019550 Sigmon (PI) 06/01/07-05/31/13 (NCE)

National Institute on Drug Abuse

Incentive-Based Smoking Cessation for Methadone Patients

This project aims to develop a voucher-based smoking cessation intervention in opioid-maintained cigarette smokers. First, we will develop and test a voucher-based intervention to promote smoking abstinence during the initial 2 weeks of the cessation effort. Second, we will develop and test the efficacy of a voucher-based intervention that seeks to sustain smoking abstinence after the intensive 2-week program is discontinued. The overall goal is to produce an efficacious, empirically-based smoking cessation intervention that can be easily disseminated to clinics throughout the country.

Role: Co-Investigator

Total costs: \$1,755,931

R01DA022491 Heil (PI) 05/01/08-02/28/12 (NCE)

National Institute on Drug Abuse

Characterizing Nicotine Withdrawal in Pregnant Smokers

The objectives of this study are to 1) perform a thorough examination of elevated baseline nicotine withdrawal symptomatology in pregnant smokers and 2) provide a comprehensive characterization of nicotine withdrawal following a quit attempt. Results will have implications for the treatment of smoking during pregnancy, particularly pharmacotherapies whose mechanism of action is the reduction of withdrawal symptomatology.

Role: Principal Investigator

Total costs: \$1,012,677

R01DA14028 Higgins (PI) 04/30/01-05/31/11

National Institute on Drug Abuse

Voucher-based Incentives to Treat Pregnant Smokers

The major goal of this project is to increase the efficacy of voucher-based incentive programs for promoting smoking cessation and preventing relapse during pregnancy and postpartum as our recent trials suggested that vouchers may be efficacious for increasing smoking cessation among pregnant smokers. Postpartum relapse rates are strikingly high in this population even among those abstinent during pregnancy. Thus, this population also offers a potentially enlightening exception to the pattern of initial abstinence begetting later abstinence.

Role: Co-Investigator

Total costs: \$5,964,946

R01DA019989 Sigmon (PI) 06/16/06-03/31/11 (NCE)

National Institute on Drug Abuse

Effective Treatment for Prescription Opioid Abuse

The overarching goal of this project is to develop a manualized, efficacious treatment for prescription opioid abuse. Despite the alarming recent increase in prescription opioid abuse, we know of no published studies evaluating treatments for this emerging population. Two experimental studies are proposed to programmatically evaluate a combined behavioral (Community Reinforcement Approach) and pharmacological (buprenorphine detoxification followed by a regiment of naltrexone therapy) treatment for prescription opioid abuse.

Role: Co-Investigator

Total costs: \$2,409,677

R01DA018410 Heil (Site PI) 09/24/04-06/30/09

National Institute on Drug Abuse

Maternal Opioid Treatment: Human Experimental Research

The objective of this multi-site clinical trial is to evaluate the possible differential impact of buprenorphine and methadone on both neonatal and maternal outcomes in opioid-dependent pregnant women. Results from this study will also provide data to guide FDA review of these medications for the treatment of opioid dependence during pregnancy.

Role: Principal Investigator

Total costs: \$2,211,838

051801 Heil (PI) 09/01/04-08/31/06

Robert Wood Johnson Smoke-Free Families Program

Examining Nicotine Withdrawal and Craving as Predictors of Relapse in Pregnant and Recently Postpartum Smokers

The objective of this study is to provide an initial characterization of nicotine withdrawal and craving among pregnant and postpartum smokers. Results will have implications for the treatment of smoking during pregnancy, particularly pharmacotherapies whose mechanism of action is the reduction of withdrawal symptomatology.

Role: Principal Investigator

Total costs: \$100,000

R03DA017813 Heil (PI) 05/15/04-04/30/06

National Institute on Drug Abuse

Early Abstinence's Effect on Later Abstinence in Smokers

The proposed study is designed to rigorously and experimentally evaluate whether a period of early abstinence from cigarette smoking, induced using financial incentives contingent on biochemically-verified abstinence, decreases longer-term relapse risk.

Role: Principal Investigator

Total costs: \$151,500

R33DA18424 Higgins (PI) 09/01/04-08/31/05

National Institute on Drug Abuse

Future Directions in Contingency Management Research

The purpose of this application is to obtain support to hold a small scientific meeting on the use of contingency management (CM) for treatment of substance use disorders and associated problems and to discuss the future of CM research.

Role: Co-Investigator

Total costs: \$25,000

Grant-In-Aid of Research Heil (PI) 1995

Sigma Xi

Activational Hormones and Prolactin's Sexually Dimorphic Effects on Food Intake

Results of previous studies indicate that there is a sex-specific feeding response to prolactin (PRL) by rats: only female rats significantly increase their food intake. The possible role of the activational actions of the gonadal hormones in this sex difference will be explored in this study.

Role: Principal Investigator

Total costs: \$500

Grant-In-Aid of Research Heil (PI) 1994

Sigma Xi

Organizational Hormones and Prolactin's Sexually Dimorphic Effects on Food Intake

Results of previous studies indicate that there is a sex-specific feeding response to prolactin (PRL) by rats: only female rats significantly increase their food intake. The possible role of the organizational actions of the gonadal hormones in this sex difference will be explored in this study.

Role: Principal Investigator

Total costs: \$500

Graduate Women in Science Fellowship Alternate Heil (PI)
Sigma Delta Epsilon

1994

Organizational Hormones and Prolactin's Sexually Dimorphic Effects on Food Intake

Results of previous studies indicate that there is a sex-specific feeding response to prolactin (PRL) by rats: only female rats significantly increase their food intake. The possible role of the organizational actions of the gonadal hormones in this sex difference will be explored in this study.

Role: Principal Investigator

Total costs: \$250

Summer Research Grant Heil (PI)

1991

Wittenberg University Faculty Research Fund

Dietary Self-selection in Rats: Influence of Sex, Gonadal Hormones and Diet Type

The objective of this study is to examine the interaction between sex (female vs. male), gonadal hormones (estrogen vs. testosterone) and diet type (high vs. low protein) on dietary self-selection in rats.

Role: Principal Investigator

Total costs: Not available

Pending

None

Selected Unfunded Grant Submissions

None

SCHOLARSHIP

Peer Reviewed Publications

Original Research

1. **Heil, S.H.**, & Subramanian, M.G. (1998). Alcohol and the hormonal control of lactation. Alcohol Health and Research World, *22*, 178-184.
2. **Heil, S.H.** (1999a). Sex-specific effects of prolactin on food intake by rats. Hormones and Behavior, *35*, 47-54.
3. **Heil, S.H.** (1999b). Activational and organizational actions of gonadal hormones and the sex-specific effects of prolactin on food intake by rats. Developmental Psychobiology, *35*, 61-67.
4. **Heil, S.H.**, Hungund, B.L., Zheng, Z.H., Jen, K.-L.C., & Subramanian, M.G. (1999). Ethanol and lactation: Effects on milk lipids and serum constituents. Alcohol, *18*, 43-48.
5. **Heil, S.H.**, & Subramanian, M.G. (2000). Chronic alcohol exposure and lactation: Extended observations. Alcohol, *20*, 1-6.
6. **Heil, S.H.**, Badger, G.J., & Higgins, S.T. (2001). Alcohol dependence among cocaine-dependent outpatients: Demographics, drug use, treatment outcome and other characteristics. Journal of Studies on Alcohol, *62*, 14-22.
7. **Heil, S.H.**, Holmes, H.W., Bickel, W.K., Higgins, S.T., Badger, G.J., Laws, H.F. & Faries, D.E. (2002). Comparison of the subjective, physiological, and psychomotor effects of atomoxetine and methylphenidate in recreational drug users. Drug and Alcohol Dependence, *67*, 149-156. Note: one of the Top 10 Journal Articles downloaded from Drug and Alcohol Dependence in 2002-2003

8. Subramanian, M.G., **Heil, S.H.**, Kruger, M.L., Collins, K.L., Buck, P.O., Zawacki, T., Abbey, A.D., Sokol, R.J., & Diamond, M.P. (2002). A three-stage alcohol clamp procedure in human subjects. Alcoholism: Clinical and Experimental Research, *26*, 1479-1483.
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10. Higgins, S.T., Sigmon, S.C., Wong, C.J., **Heil, S.H.**, Badger, G.J., & Donham, B.D. (2003). Community reinforcement therapy for cocaine-dependent outpatients. Archives of General Psychiatry, *60*, 1043-1052.
11. Higgins, S.T., **Heil, S.H.**, Plebani Lussier, J. (2004). Clinical implications of reinforcement as a determinant of substance use disorders. Annual Review of Psychology, *55*, 431-461.
12. **Heil, S.H.**, Alessi, S., Plebani, J., Badger, G.J. & Higgins, S.T. (2004). An experimental test of the influence of prior cigarette smoking abstinence on future abstinence. Nicotine and Tobacco Research, *6*, 471-479.
13. Higgins, S.T., **Heil, S.H.**, Solomon, L., Plebani Lussier, J., Abel, R., Lynch, M.L. & McHale, L. (2004). A pilot study on voucher-based incentives to promote abstinence from cigarette smoking during pregnancy and postpartum. Nicotine and Tobacco Research, *6*, 1015-1020.
14. **Heil, S.H.**, Sigmon, S.C., Mongeon, J.A., & Higgins, S.T. (2005). Characterizing and improving HIV/AIDS knowledge in cocaine-dependent outpatients. Experimental and Clinical Psychopharmacology, *13*, 238-243.
15. **Heil, S.H.**, Johnson, M.W. Higgins, S.T., & Bickel, W.K. (2006). Delay discounting in currently using and currently abstinent cocaine-dependent outpatients and non-drug-using matched controls. Addictive Behaviors, *31*, 1290-1294.
16. Bernstein, I.M., Mongeon, M.A., Badger, G.J., Solomon, L., **Heil, S.H.**, & Higgins, S.T. (2005). Maternal smoking and its association with birth weight. Obstetrics and Gynecology, *106*, 986-991.
17. Lussier, J.P., **Heil, S.H.**, Mongeon, J.A., Badger, G.J., & Higgins, S.T. (2006). A meta-analysis of voucher-based reinforcement therapy for substance use disorders. Addiction, *101*, 192-203.
18. **Heil, S.H.**, Higgins, S.T., Mongeon, J.A., Badger, G.J., & Bernstein, I.M. (2006). Characterizing nicotine withdrawal in pregnant cigarette smokers. Experimental and Clinical Psychopharmacology, *14*, 165-170.
19. Solomon, L.J., Higgins, S.T., **Heil, S.H.**, Badger, G.J., Mongeon, J.A., & Bernstein, I.M. (2006). Psychological symptoms following smoking cessation in pregnant smokers. Journal of Behavioral Medicine, *29*, 151-160.
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21. Higgins, S.T., **Heil, S.H.**, Badger, G.J., Mongeon, J., Solomon, L., McHale, L., & Bernstein, I.M. (2007). Biochemical verification of smoking status in pregnant and recently postpartum women. Experimental and Clinical Psychopharmacology, *15*, 58-66.
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130. Higgins, S.T., Erath, T.G., DeSarno, M., Gaalema, D.E., Sigmon, S.C., **Heil, S.H.**, & Tidey, J.W. (2022). Leveraging the Cigarette Purchase Task to understand relationships between cumulative vulnerabilities, the relative reinforcing effects of smoking, and response to reduced nicotine content cigarettes. Preventive Medicine, 165(Pt B):107206.
131. Gaalema, D.E., Snell, L.M., Tidey, J.W., Sigmon, S.C., **Heil, S.H.**, Lee, D.C., Bunn, J.Y., Park, C., Hughes, J.R., & Higgins, S.T. (2022). Potential effects of nicotine content in cigarettes on use of other substances. Preventive Medicine, 165(Pt B):107290.
132. Browning, K.O., DeSarno, M.J., Davis, D.R., Streck, J.M., Bergeria, C.L., Harfmann, R.F., Parker, M.A., **Heil, S.H.**, Sigmon, S.C., Gaalema, D.E., Tidey, J.W., Lee, D.C., Tetreault, H.J., & Higgins, S.T. (2022). Relating individual differences in the reinforcing value of smoking and dependence severity to nicotine exposure levels in vulnerable populations. Preventive Medicine, 165(Pt B):107312.

133. Kock, L., Melbostad, H.S., & **Heil, S.H.** (in press). Prevalence of psychosocial issues among pregnant women who do and do not use illicit substances. Psychology of Addictive Behaviors.
134. Harfmann, R.F., **Heil, S.H.**, Cannon, L., & MacAfee, L.K. (in press). Reasons for past abortions among women in treatment for opioid use disorder. Psychology of Addictive Behaviors.
135. Kock, L.S., Erath, T.G., Coleman, S.R.M., Higgins, S.T., & **Heil, S.H.** (in press). Financial incentives for smoking abstinence among pregnant and postpartum women: A systematic review and meta-analysis. Preventive Medicine.

In Review

1. Harfmann, R.F., **Heil, S.H.**, Bunn, J.Y., Snell, L.M., Tidey, J.T., Sigmon, S.C., Gaalema, D.E., Lee, D.C., Streck, J.M., Bergeria, C.L., Davis, D.R., Plucinski, S., & Higgins, S.T. (under revision). Effects of very low nicotine content cigarettes on changes in weight among individuals with psychiatric conditions or socioeconomic disadvantage.

In Preparation

1. Oliver, A.C., Melbostad, H.S., Matusiewicz, A.K., Rey, C.N., Badger, G.J., & **Heil, S.H.** (in preparation). Correspondence of verified and self-reported contraceptive use.
2. Kock, L., **Heil, S.H.**, Chen, F.F., & Higgins, S.T. (in preparation). Relationships between socioeconomic position and quitting smoking among pregnant women: A longitudinal assessment from Waves 1-5 of the Population Assessment of Tobacco and Health Study.

Non-Peer Reviewed Publications and Other Creative Activities

Review Articles

Not applicable

Books and Chapters

Books

Higgins, S.T., Silverman, K., & **Heil, S.H.** (Eds.) (2008). Contingency Management in the Treatment of Substance Use Disorders: A Science-Based Treatment Innovation. New York, NY: Guilford Press.

Chapters

1. Higgins, S.T., Budney, A.J., & **Heil, S.H.** (2001). Behavioral treatments. In R. Carson-DeWitt (Ed.), Encyclopedia of Drugs, Alcohol, and Addictive Behavior (2nd ed., Vol.3, pp. 1225-1227). Farmington, MI: Macmillan.
2. Higgins, S.T., Budney, A.J., & **Heil, S.H.** (2001). Contingency management. In R. Carson-DeWitt (Ed.), Encyclopedia of Drugs, Alcohol, and Addictive Behavior (2nd ed., Vol.3, pp. 1231-1233). Farmington, MI: Macmillan.
3. Higgins, S.T., Silverman, K. & **Heil, S.H.** (2003). Behavioral interventions for problem drinking: Community reinforcement and contingency management. In B. Johnson, P. Ruiz and M.J. Galanter (Eds.), Alcoholism: A Practical Handbook (pp. 111-118). Baltimore: Lippincott, Williams & Wilkins.

4. Higgins, S.T., & Heil, S.H. (2004). Principles of learning in the study and treatment of substance abuse. In M. Galanter & H.D. Kleber (Eds.) Textbook of Substance Abuse Treatment (3rd ed., pp. 81-87). Arlington, VA: American Psychiatric Publishing, Inc.
5. Higgins, S.T. & Heil, S.H. (2004). Drug abuse: behavioral treatment. In N.B. Anderson (Ed.), Encyclopedia of Health and Behavior (Vol. 1, pp. 265-269). Thousand Oaks, CA: Sage Publications, Inc.
6. Higgins, S.T., Heil, S.H., & Sigmon, S.C. (2007). A Behavioral Approach to the Treatment of Substance Use Disorders. In P. Sturmey (Ed.) Functional Analysis in Clinical Treatment (pp. 261-282). Amsterdam: Elsevier Press.
7. Higgins, S.T., Heil, S.H., & Rogers, R.E. (2008). Contingency management. In P. Korsmeyer & H.R. Kranzler (Eds.), Encyclopedia of Drugs, Alcohol, and Addictive Behavior (3rd ed., Vol. 4, pp. 159-162). Farmington, MI: Gale Group.
8. Higgins, S.T., Sigmon, S.C., & Heil, S.H. (2008). Drug Abuse and Dependence. In D.H. Barlow (Ed.), Clinical Handbook of Psychological Disorders (4th ed., pp. 547-577). New York: Guilford Publications, Inc.
9. Heil, S.H., Yoon, J.H., & Higgins, S.T. (2008). Pregnant and postpartum women. In S.T. Higgins, K. Silverman & S.H. Heil (Eds.) Contingency Management in the Treatment of Substance Use Disorders: A Science-Based Treatment Innovation (pp.182-201). New York, NY: Guilford Press.
10. Higgins, S.T., Heil, S.H., Rogers, R.E., & Chivers, L. (2008). Cocaine. In S.T. Higgins, K. Silverman & S.H. Heil (Eds.) Contingency Management in the Treatment of Substance Use Disorders: A Science-Based Treatment Innovation (pp. 19-41). New York, NY: Guilford Press.
11. Higgins, S.T., & Heil, S.H. (2009). Contingency management. In G.L. Fisher & N Roget (Eds.), The Encyclopedia of Substance Abuse Prevention, Treatment, and Recovery, (pp. 228-231). Thousand Oaks, CA: Sage Publications.
12. Higgins, S.T., Heil, S.H. & Sigmon, S.C. (2010). Contingency management in drug dependence. In I. Stolerman (Ed.), Encyclopedia of Psychopharmacology (pp. 350-354). Heidelberg, Germany: Springer Science and Business Media.
13. Higgins, S.T., Sigmon, S.C., & Heil, S.H. (2011). Contingency management in the treatment of substance use disorders: Trends in the literature. In P. Ruiz & E. Strain (Eds.), Lowinson and Ruiz's Substance Abuse: A Comprehensive Textbook (5th ed., pp. 603-621). Baltimore, MD: Lippincott Williams & Wilkins.
14. Higgins, S.T., Heil, S.H. & Sigmon, S.C. (2012). Voucher-based contingency management in the treatment of substance use disorders. In G.J. Madden, T. Hackenberg, & K.A. Lattal (Eds.), American Psychological Association Handbook of Behavior Analysis (pp.481-500). Washington, D.C.: American Psychological Association.
15. Higgins, S.T., Sigmon, S.C., & Heil, S.H. (2014). Drug use disorders. In D.H. Barlow (Ed.), Clinical Handbook of Psychological Disorders (5th ed., pp 588-616). New York: Guilford Publications, Inc.

16. Higgins, S.T., **Heil, S.H.** & Sigmon, S.C. (2015). Contingency management in the treatment of substance use disorders. In I. Stolerman & L.H. Price (Eds.), Encyclopedia of Psychopharmacology (2nd ed., pp. 441-446). Heidelberg, Germany: Springer-Verlag.
17. **Heil, S.H.**, Davis, D.R., Arger, C.A., & Higgins, S.T. (2018). Contingency management and the Community Reinforcement Approach. In S.C. Miller, D.A. Fiellin, R.N. Rosenthal, & R. Saitz (Eds.), The ASAM Principles of Addiction Medicine (6th ed., pp. 934-950). Philadelphia, PA: Wolters Kluwer.
18. **Heil, S.H.**, Arger, C.A., Davis, D.R., & Higgins, S.T. (2019). Contingency management and the community reinforcement approach. In A.J. Herron & T.K. Brennan (Eds.), The ASAM Essentials of Addiction Medicine (3rd ed., pp. 369-373). Philadelphia, PA: Wolters Kluwer.
19. **Heil, S.H.**, Rey, C.N., Davis, D.R., & Higgins, S.T. (2020). Contingency management and the community reinforcement approach. In P. Sturmey (Ed.), Functional Analysis in Clinical Treatment (2nd ed. pp. 294-314). Amsterdam: Elsevier.
20. Higgins, S.T., **Heil, S.H.**, & Peck, K.R. (2021). Substance use disorders. In D.H. Barlow (Ed.), Clinical Handbook of Psychological Disorders (6th ed.). New York: Guilford Publications, Inc.
21. **Heil, S.H.**, Melbostad, H.S., & Cioffredi, L.-A. (in press). Neonatal abstinence syndrome. In K.E. Dunn (Ed.), The Oxford Handbook of Opioids and Opioid Use Disorder (1st ed.). Oxford: Oxford University Press.
22. **Heil, S.H.**, Erath, T.G., Harfmann, R.F., & Higgins, S.T. (in press). Contingency management and the community reinforcement approach. In S.C. Miller, R.N. Rosenthal, S. Wakeman, J.M. Tetrault, S. Levy & A. Saxon (Eds.), The ASAM Principles of Addiction Medicine (7th ed.). Philadelphia, PA: Wolters Kluwer.

Other Scholarly Publications

1. **Heil, S.H.**, Wong, C.J., & Higgins, S.T. (2000). Community reinforcement approach combined with contingent vouchers for the treatment of cocaine dependence. The Addictions Newsletter, 7, 24-26.
2. Higgins, S.T. & **Heil, S.H.** (2003, May/June). Urine the money: Voucher-based incentive scheme for drug treatment. Druglink, 18, 11-12.
3. **Heil, S.H.**, Coyle, M.G., Fischer, G., Jones, H.E., Kaltenbach, K., Martin, P.R., Selby, P., & Stine, S.M. (2006). The MOTHER (Maternal Opioid Treatment: Human Experimental Research) Study. The Addictions Newsletter, 13 (2), 7-9.
4. Jones, H.E., Kaltenbach, K., Coyle, M.G., **Heil, S.H.**, Martin, P.R., O'Grady, K.E., Arria, A.M., Fischer, G., Stine, S.M., & Selby, P. (2009). Re-building lives: Helping women recover from opioid addiction during pregnancy. Counselor, 10, 10-19.
5. **Heil, S.H.**, & Higgins, S.T. (2012). The scientific and ethical rationale for using incentives to promote contraceptive use among drug-abusing women. Invited commentary on Lucke and Hall (2012). Addiction, 107, 1044-1046.
6. Jones, H.E., **Heil, S.H.**, Kaltenbach, K., Stine, S.M., Coyle, M.G., Arria, A.M., O'Grady, K.E., Selby, P., & Martin, P.R. (2012). Comments on: Efficacy versus effectiveness of

- buprenorphine and methadone maintenance in pregnancy. Journal of Addictive Diseases, 31, 1-6.
7. Jones, H.E., Kaltenbach, K., **Heil, S.H.**, Stine, S.M., Coyle, M.G., Arria, A.M., O'Grady, K., Selby, P., Martin, P.R., Jansson, L., Fischer, G. (2012). Comment on: Intrauterine abstinence syndrome (IAS) during buprenorphine inductions and methadone tapers: can we assure the safety of the fetus? Journal of Maternal-Fetal and Neonatal Medicine, 25, 1197-1201.
 8. Higgins, S.T., & **Heil, S.H.** (2015). to improve cessation outcomes with pregnant cigarette smokers. Addiction, 110, 690-692.
 9. Jones, H.E., **Heil, S.H.**, & O'Grady, K. (2015). Comment on: Infants of opioid-dependent mothers: Neurodevelopment at six months. Early Human Development.
 10. Higgins, S.T., **Heil, S.H.**, & Solomon, L.J. (2015). A larger context for considering the Tappin et al. report on financial incentives for smoking cessation in pregnant and newly postpartum women. BMJ Rapid Response: (<http://www.bmj.com.ezproxy.uvm.edu/content/350/bmj.h134/rapid-responses>).

Abstracts

Oral – Regional

1. Linares Scott, T. & **Heil, S.H.** (March 2007). The MOTHER study. University of Vermont Graduate Research Day, University of Vermont, Burlington, VT. Won “Best Presentation” award.
2. Herrmann, E.S., **Heil, S.H.**, Higgins, S.T., Solomon, L.J., & Bernstein, I.M. (May 2009). Natural history of changes in cigarette smoking upon learning of pregnancy. University of Vermont Graduate Research Day, University of Vermont, Burlington, VT.
3. Herrmann, E.S., **Heil, S.H.**, Higgins, S.T., Washio, Y.T., Donham, R.F., Ironside, K.R. (June 2011). Improving HIV/AIDS knowledge among cocaine-dependent outpatients. Psychiatry Research Day, University of Vermont, Burlington, VT.
4. **Heil, S.H.**, Sigmon, S.C., Meyer, M.C., & Higgins, S.T. (May 2012). Improving effective contraceptive use among drug-dependent women. Psychiatry Research Day, University of Vermont, Burlington, VT.

Oral - National

1. **Heil, S.H.** (June 2000). Effects of contingent reinforcement on smoking abstinence and nicotine withdrawal. Contingency Management Working Group, College on Problems of Drug Dependence, San Juan, Puerto Rico.
2. **Heil, S.H.** (June 2001). Previous abstinence as a determinant of future abstinence from smoking. Contingency Management Working Group, College on Problems of Drug Dependence, Scottsdale, AZ.
3. **Heil, S.H.**, & Higgins, S.T. (June 2004). Characterizing nicotine withdrawal and craving in pregnant cigarette smokers. Paper presentation at the 66th Annual Meeting of the College on Problems of Drug Dependence (CPDD) in San Juan, Puerto Rico.

4. Lussier, J.P., **Heil, S.H.**, & Higgins, S.T. (June 2004). An analysis of effect sizes in clinical trials of voucher-based incentives. Contingency Management Working Group, College on Problems of Drug Dependence, San Juan, Puerto Rico.
5. Heil, S. H., Higgins, S.T., & Badger, G.J. (September 2004). Characterizing nicotine withdrawal and craving in pregnant cigarette smokers. Robert Wood Johnson Foundation Smoke-Free Families Program Phase III Grantees Meeting, Princeton, NJ.
6. **Heil, S.H.**, Chivers, L., & Higgins, S.T. (June 2005). Efficacy of contingency management with treatment-seeking cigarette smokers. Contingency Management Working Group, College on Problems of Drug Dependence, Orlando, FL.
7. Lussier, J.P., **Heil, S.H.**, Mongeon, J.A., Badger, G.J., & Higgins, S.T. (June 2005). A meta-analysis of voucher-based reinforcement therapy for substance-use disorders. Paper presentation at the 67th Annual Meeting of the College on Problems of Drug Dependence, Orlando, FL.
8. **Heil, S.H.**, Remillard, A., & Higgins, S.T. (February 2006). Early abstinence's effect on later abstinence in cigarette smokers. Participated in symposium, "Smoking and Drug/Alcohol Use: Developing Models, Interventions, and Environments that Promote Change and Cessation" (C. McNamara Spitznas, chair) held at the 11th annual meeting of the International Conference on Treatment of Addictive Behaviors in Santa Fe, NM.
9. **Heil, S.H.**, & Trifiletti, L. (June 2006). A computer program to track earnings and purchases in VBRT interventions. Contingency Management Working Group, College on Problems of Drug Dependence, Scottsdale, AZ.
10. **Heil, S.H.** (August 2006). Organized and chaired symposium, "Innovative Adaptations to Identify and Treat Licit and Illicit Drug Use by Pregnant Women" held at the 114th annual meeting of the American Psychological Association in New Orleans, LA.
11. **Heil, S.H.**, Higgins, S.T., Solomon, L.J., Lynch, M.E., McHale, L., Dumeer, A., Jacuzzi, N., Shapiro, L., & Bernstein, I.M. (February 2007). Voucher-based incentives for abstinence from cigarette smoking in pregnant and postpartum women. Participated in and co-chaired symposium, "Pregnancy and Post-partum" held at the 13th annual meeting of the Society for Research on Nicotine and Tobacco, Austin, TX.
12. Heil S, Scott T, Sigmon S, Higgins, S. (June 2008). Characterizing methadone dose during late pregnancy and postpartum. Paper presentation at the 70th Annual Meeting of the College on Problems of Drug Dependence, San Juan, PR.
13. Sigmon, S.C., Dunn, K., Heil, S., & Higgins, S.T. (June 2008). Developing a treatment for prescription opioid abuse. Paper presentation at the 70th Annual Meeting of the College on Problems of Drug Dependence, San Juan, PR.
14. Jones, H.E, O'Grady, K.E, Kaltenbach, K., Fischer, G., **Heil, S.H.**, Martin, P.R., Stine, S.M., Coyle, M.G., Selby, P., & Arria, A.M. (June 2008). Smoking in pregnant patients screened for an agonist medication study: comparisons to other pregnant and/or drug dependent female patients. Paper presentation at the 70th Annual Meeting of the College on Problems of Drug Dependence, San Juan, PR.
15. Rogers, R.E., Higgins, S.T., & **Heil, S.H.** (August 2008). Voucher-based incentives promote abstinence from smoking during pregnancy and postpartum. Participated in symposium, "Expanding Contingency Management Interventions – Treating Smokers,

Pregnant Women, and Adolescents” held at the 116th annual meeting of the American Psychological Association, Boston, MA.

16. Sigmon, S.C., Dunn, K., Saulsgiver, K., Heil, S., & Higgins, S. (June 2009). Randomized, double-blind trial evaluating buprenorphine taper for prescription opioid abuse. Paper presentation at the 71st Annual Meeting of the College on Problems of Drug Dependence, Reno, NV.
17. Stine, S., Arria, A., O’Grady, K., Kaltenbach, K., Fischer, G., Martin, P., Heil, S., Coyle, M., Selby, P., & Jones, H. (June 2009). Characteristics associated with cocaine use in pregnant opioid-dependent women: Preliminary results from the Maternal Opioid Treatment: Human Experimental Research study. Paper presentation at the 71st Annual Meeting of the College on Problems of Drug Dependence, Reno, NV.
18. Tuten, M., Jones, H., O’Grady, K., Fitzsimons, H., Heil, S., & Chisolm, M. (June 2009). Delivery and neonatal outcomes of pregnant methadone stabilized patients with and without a current mood disorder. Paper presentation at the 71st Annual Meeting of the College on Problems of Drug Dependence, Reno, NV.
19. Higgins, T.M., Higgins, S.T., **Heil, S.H.**, & Badger, G.J. (June 2009). Smoking cessation and breastfeeding. Paper presentation at the 71st Annual Meeting of the College on Problems of Drug Dependence, Reno, NV.
20. **Heil, S.H.** (June 2010). Predictors of maternal treatment outcome in methadone and buprenorphine maintained pregnant women. Participated in and co-chaired workshop, “Methadone and Buprenorphine: Results of the Maternal Opioid Treatment: Human Experimental Research (MOTHER) Trial” (I. Montoya, chair; S. Heil, co-chair) held at the 72nd annual meeting of the College on Problems of Drug Dependence in Scottsdale, AZ.
21. Herrmann, E.S., **Heil, S.H.**, Higgins, S.T., Solomon, L.J., & Bernstein, I.M. (June 2010). Natural history of changes in cigarette smoking upon learning of pregnancy. Paper presentation at the 72nd Annual Meeting of the College on Problems of Drug Dependence in Scottsdale, AZ.
22. Gaalema, D., Higgins, S., Heil, S., Hanson, J., Lopez, A., Solomon, L., & Naylor, A. (May 2011). The use of contingency management to promote breastfeeding in low income women. Paper presentation at the Annual Meeting of the Association for Behavior Analysis International in Denver, CO.
23. Sigmon, S.C., Higgins, S.T., **Heil, S.H.** & Saulsgiver, K.A. (June 2011). Investigating a genetic marker of vulnerability for stimulant abuse. Paper presentation at the 73rd Annual Meeting of the College on Problems of Drug Dependence in Hollywood, FL.
24. Chisolm, M.S., Acquavita, S.P., Kaltenbach, K., Winklbaur, B., **Heil, S.H.**, Martin, P.R., Stine, S.M., Coyle, M., Leoutsakos, M.S., Jansson, L.M., Tuten, M., Jones, H. (June 2011). Cigarette smoking and neonatal abstinence syndrome in opioid-dependent agonist-maintained pregnant patients on methadone vs. buprenorphine. Paper presentation at the 73rd Annual Meeting of the College on Problems of Drug Dependence in Hollywood, FL.
25. Bradstreet, M.P., Higgins, S. T., **Heil, S.H.**, Badger, G.J., Skelly, J.M. (June 2011). Delay discounting predicts smoke status during pregnancy. Paper presentation at the 73rd Annual Meeting of the College on Problems of Drug Dependence in Hollywood, FL.
26. Herrmann, E., Heil, S., Higgins, S., Washio, Y., Donham, R., Ironside, K. (June 2011).

- Improving HIV/AIDS knowledge among cocaine-dependent outpatients. Paper presentation at the 73rd Annual Meeting of the College on Problems of Drug Dependence in Hollywood, FL.
27. Gaalema, D.E., Higgins, S.T., Lopez, A.A., Saulsgiver, K.A., **Heil, S.H.**, & Bernstein, I.M. (May 2012). Differentiating abstinent and non-abstinent pregnant smokers using patterns of voucher reimbursement and impulsivity measures. Participated in symposium, "Recent advances in contingency management research I: Incentivizing healthy choices" (S. Meredith, chair) at the Association for Behavior Analysis International Annual Convention, Seattle, WA.
28. **Heil, S.H.** (June 2012). Behavioral treatments for pregnant smokers: The need for more intensive and effective interventions. Participated in symposium, "Do we under-treat the most prevalent form of substance abuse among pregnant women?" (S.T. Higgins, chair) at the 74th Annual Meeting of the College on Problems of Drug Dependence, Palm Springs, CA.
29. **Heil, S.H.**, Sigmon, S.C., Meyer, M.C., & Higgins, S.T. (June 2012). Improving effective contraceptive use among drug-dependent women. Contingency Management Working Group, College on Problems of Drug Dependence, Palm Springs, CA.
30. Gaalema, D.E., **Heil, S.H.**, Metayer, J., Johnston, A. (June 2013). Difference in time to treatment in neonates exposed to buprenorphine or methadone in utero. Paper presentation at the 75th Annual Meeting of the College on Problems of Drug Dependence, San Diego, CA.
31. **Heil, S.H.**, Hand, D.J., Sigmon, S.C., Meyer, M.C., & Higgins, S.T. (August 2013). Financial incentives to promote effective contraceptive use among drug-dependent women. Participated in symposium, "Behavioral economics and maternal/infant health among substance abusers" (S.D. Noursi and S.T. Higgins, chairs) at the 121st Annual Meeting of the American Psychological Association, Honolulu, HI.
32. **Heil, S.H.**, Hand, D.J., Sigmon, S.C., Meyer, M.C., Badger, G.J., & Higgins, S.T. (April 2014). Improving effective contraceptive use among opioid-maintained women. Paper presentation at the 35th Annual Meeting and Scientific Sessions of the Society of Behavioral Medicine, Philadelphia, PA.
33. **Heil, S.H.**, Hand, D.J., Bergeria, C.L., Gaalema D.E., Badger, G.J., Johnston, A.M., Sigmon S.C., & Higgins, S.T. (June 2014). Reliability of pupil diameter measurements in neonates. Paper presentation at the 76th Annual Meeting of the College on Problems of Drug Dependence, San Juan, Puerto Rico.
34. Bergeria, C.L. & **Heil, S.H.** (November 2014). Surveying lactation professionals regarding marijuana use and breastfeeding. Originally slated as a poster presentation, was later elevated to a platform presentation for the 19th Annual International Meeting of the Academy of Breastfeeding Medicine, Cleveland, OH.
35. **Heil, S.H.**, Solomon, L.J., Skelly, J.M., Bernstein, I.M., & Higgins, S.T. (June 2015). Correspondence between self-reported and biochemical measures of cigarette smoking in pregnant women. Paper presentation at the 77th Annual Meeting of the College on Problems of Drug Dependence, Phoenix, AZ (Session Chair).
36. Bergeria, C.L. & **Heil, S.H.** (June 2015). Surveying lactation professionals regarding marijuana use and breastfeeding. Paper presentation as part of the "What's Hot" Media

Forum at the 77th Annual Meeting of the College on Problems of Drug Dependence, Phoenix, AZ. Video of summary of presentation posted on the National Institute on Drug Abuse's YouTube site has been viewed nearly 1,400 times.

37. Bergeria, C.L. & **Heil, S.H.** (June 2015). Surveying lactation professionals regarding marijuana use and breastfeeding. Paper presentation at the 77th Annual Meeting of the College on Problems of Drug Dependence, Phoenix, AZ.
38. Arger, C.A., Heil, S.H., Sigmon, S.C., Tidey, W.J., Stitzer, M.L., Gaalema, D.E., DeSarno, M.J., Durand, H.J., Ruggieri, E.K., & Higgins, S.T. (October 2015). Preliminary validity of the modified cigarette evaluation questionnaire in predicting the reinforcing effects of cigarettes that vary in nicotine content under double-blind conditions. Paper presentation at the annual Tobacco Centers of Regulatory Science Grantee Meeting, Bethesda, M.D.
39. **Heil, S.H.** (December 2015). Methadone and buprenorphine for opioid dependence during pregnancy: A retrospective cohort study. Participated in symposium, "The use of medications to treat opioid dependence during pregnancy" (K. Kaltenbach, chair) at the 26th Annual Meeting and Scientific Symposium of the American Academy of Addiction Psychiatry, Huntington Beach, CA.
40. Bergeria, C., Heil, S., Solomon, L., Skelly, J., Bernstein, I., & Higgins, S. (March 2016). Correspondence between self-reported and biochemical measures of cigarette smoking in pregnant women. Paper presentation at the 22nd Annual International Meeting of the Society for Research on Nicotine and Tobacco, Chicago, IL.
41. Redner, R., Zvorsky, I., Heil, S., Sigmon, S., Tidey, J., Stitzer, M., Gaalema, D., DeSarno, M., Durand, H., & Higgins, S. (March 2016). Demand for cigarettes varying in nicotine content in smokers from vulnerable populations: A pilot study. Paper presentation at the 22nd Annual International Meeting of the Society for Research on Nicotine and Tobacco, Chicago, IL.
42. Matusiewicz, A.K., **Heil, S.H.**, Melbostad, H.S., Hand, D.J., Sigmon, S.C., Meyer, M.S., Badger, G.J., & Higgins, S.T. (April 2016). Improving prescription contraceptive use among opioid-maintained women: Stages I & II. Presented in focus session, "Health Care Reform and Integration: Women's Reproductive Health in SUD Treatment" at the 47th Annual Conference of the American Society of Addiction Medicine, Baltimore, MD.
43. Streck, J.M., Sigmon, S.C., **Heil, S.H.**, Stitzer, M.L., Tidey, J.W., Gaalema, D.E., DeSarno, M.J., Balas, K., Durand, H.J., & Higgins, S.T. (May 2016). Subjective effects of smoking among opioid-maintained individuals: Results from a pilot study examining reduced nicotine content cigarettes. Paper presentation at the annual NIH Tobacco Regulatory Science Conference, Bethesda, MD.
44. **Heil, S.H.** (June 2016). The assessment and treatment of neonatal abstinence syndrome: What do we know? Participated in symposium, "Neonatal abstinence syndrome: Context and consequences in 2016" (K. Kaltenbach, chair) at the 78th Annual Meeting of the College on Problems of Drug Dependence, Palm Springs, CA.
45. Sigmon, S.C., Ochalek, T.A., Hruska, B., **Heil, S.H.**, Higgins, S., Rose, G., & Moore, B.A. (June 2016). Interim buprenorphine treatment for reducing illicit opioid use during treatment delays. Paper presentation at the 78th Annual Meeting of the College on Problems of Drug Dependence, Palm Springs, CA.
46. Arger, C.A., **Heil, S.H.**, Sigmon, S.C., Tidey, J.W., Stitzer, M., Gaalema, D., DeSarno, M.,

- Durand, H., Ruggieri, E., & Higgins, S.T. (June 2016). Validity of the modified cigarette evaluation questionnaire in predicting the reinforcing effects of cigarettes that vary in nicotine content under double-blind conditions. Paper presentation at the 78th Annual Meeting of the College on Problems of Drug Dependence, Palm Springs, CA.
47. Higgins, S.T., Redner, R., **Heil, S.H.**, Sigmon, S.C., Tidey, J.W., Gaalema, D.E., Stitzer, M.L. (August 2016). Reducing the burden of cigarette smoking in vulnerable populations. Presented in symposium, "Using behavioral science to evaluate the feasibility of a national nicotine reduction policy," at the 124th Annual Meeting of the American Psychological Association, Denver, CO.
48. Streck, J., Sigmon, S., **Heil, S.**, Stitzer, M., Tidey, J., Gaalema, D., Bergeria, C., Davis, D., Naud, S., Bunn, J., Hughes, J., & Higgins, S. (October 2017). Characterizing nicotine withdrawal across vulnerable populations: Data from a trial examining reduced nicotine content cigarettes. Presented in panel session, "Research on reduced nicotine content cigarettes," at the annual NIH Tobacco Regulatory Science Conference, Bethesda, MD.
49. **Heil, S. H.**, Matusiewicz, A.K., Melbostad, H. S., Sigmon, S. C., Badger, G. J., MacAfee, L. K., Rey, C. N., & Higgins, S. T. (March 2018). Increasing effective contraceptive use among opioid-maintained women at risk for unintended pregnancy. Presented in symposium at the 2nd Annual Convention of Women in Behavior Analysis, Nashville, TN.
50. Bergeria, C., **Heil, S.H.**, Harfmann, R.F., Bunn, J., Tetreault, H.J., & Higgins, S.T. (March 2020). Addiction potential of cigarettes with reduced nicotine content in pregnant women. Presented in symposium at the 26th Annual International Meeting of the Society for Research on Nicotine and Tobacco, New Orleans, LA.
51. **Heil, S. H.**, Matusiewicz, A.K., Melbostad, H. S., Sigmon, S. C., Badger, G. J., MacAfee, L. K., Rey, C. N., & Higgins, S. T. (June 2020). Increasing effective contraceptive use among receiving medication for opioid use disorder and at risk for unintended pregnancy. Paper presentation at the 82nd Annual Meeting of the College on Problems of Drug Dependence, Hollywood, FL (virtual due to COVID-19 pandemic).
52. Wiley, R.C, Sigmon, S., DeSarno, M.J., Bunn, J.Y., Harfmann, R.F., Davis, D.R., Streck, J.M., Bergeria, C.L., Parker, M.A., **Heil, S.H.**, Gaalema, D.E., Tidey, J., Lee, D., Hughes, J.R., Markesich, C., Nesheim-Case, R., & Higgins, S.T. (February 2021). Investigating the impact of opioid agonist treatment on nicotine metabolite ratio among vulnerable smokers. Paper presentation during the 27th Annual International Meeting of the Society for Research on Nicotine and Tobacco (virtual due to COVID-19 pandemic).
53. **Heil, S.H.**, Melbostad, H.S., & Kock, L. (June 2023). Prevalence of psychosocial issues among pregnant women who do and do not use illicit substances. Paper presentation at the 85th Annual Meeting of the College on Problems of Drug Dependence, Denver, CO.

Oral – International

1. **Heil, S.H.**, McHale, L., Higgins, S.T. (June 2002). Saliva and urine cotinine testing in a CM intervention for pregnant cigarette smokers. Contingency Management Working Group, College on Problems of Drug Dependence, Quebec, Canada.
2. **Heil, S.H.** & Higgins, S.T. (August 2003). Voucher-based incentives in the treatment of substance abuse. Participated in symposium, "Contingency management incentives in the treatment of substance abuse" (C.E. Hughes, chair) held at the 111th Annual Convention of

the American Psychological Association in Toronto, Ontario.

3. **Heil, S.H.** (October 2006). Voucher-based incentives to reduce drug use during pregnancy. Participated in symposium, “New Approaches in the Treatment of Opioid Dependency During Pregnancy” (K. Kaltenbach, chair) held at the 7th Annual Meeting of the European Opiate Addiction Treatment Association (EUROPAD) in Bratislava, Slovak Republic.
4. Rogers, R., **Heil, S.H.**, & Higgins, S.T. (June 2007). Smoking during pregnancy: A contingency management intervention. International Committee Workshop, “Pregnancy and Addiction” (G. Fischer & H. Jones, chairs), College on Problems of Drug Dependence, Quebec City, Quebec.
5. **Heil, S.H.**, Higgins, S.T., & Sigmon, S.C. (October 2009). Incentives and reinforcers to promote drug abstinence and other health behavior change. Invited speaker at NIDA R13 Workshop at the 8th International Conference on Urban Health in Nairobi, Kenya.
6. **Heil, S.H.** (May 2010). Predictors of maternal treatment outcome in methadone and buprenorphine maintained pregnant women. Participated in symposium, “Opioid Addiction and Pregnancy: The MOTHER Study” (K. Kaltenbach, chair) held at the 9th Annual Meeting of the European Opiate Addiction Treatment Association (EUROPAD) in Zagreb, Croatia.
7. Meyer, M., Johnston, A., **Heil, S.**, & Crocker, A. (May 2012). Induction onto buprenorphine during pregnancy: Evidence from real life experience. Participated in symposium, “Treating opioid-dependent women: new horizons” (I.O. Lund, H. Jones, chairs) held at the 10th Annual Meeting of the European Opiate Addiction Treatment Association (EUROPAD) in Barcelona, Spain.
8. **Heil, S.H.**, Matusiewicz, A.K., Hand, D.J., Melbostad, H.S., Sigmon, S.C., Meyer, M.C., Badger, G.J., & Higgins, S.T. (May 2016). Improving prescription contraceptive use among opioid-maintained women: Stages I & II. Presented in symposium, “Women with opioid use disorder and reproductive health: Dispelling myths and addressing unmet needs” (M. Terplan, chair) at the 12th Annual Meeting of the European Opiate Addiction Treatment Association (EUROPAD) in Leiden, The Netherlands. Due to travel problems, was presented by the chair on behalf of the first author.
9. Arger, C., Taghavi, T., **Heil, S.**, Skelly, J., Tyndale, R., & Higgins, S. (June 2017). Influence of pregnancy on the nicotine metabolite ratio: Changes during antepartum and postpartum. Paper presentation at the 79th Annual Meeting of the College on Problems of Drug Dependence, Montreal, Canada.
10. Davis, D., Bergeria, C., Streck, J., Bunn, J., Gaalema, D., **Heil, S.**, Sigmon, S., Stitzer, M., Tidey, J., & Higgins, S. (June 2017). The influence of mentholation on usual brand and research cigarettes of varying nicotine content in vulnerable populations. Paper presentation at the 79th Annual Meeting of the College on Problems of Drug Dependence, Montreal, Canada.
11. **Heil, S.H.**, Kock, L.S., Erath, T.G., Coleman, S.R.M., & Higgins, S.T. (September 2023). Financial incentives for smoking abstinence among pregnant and postpartum women: A systematic review and meta-analysis. Paper presentation scheduled for the Annual Meeting of the Society for Research on Nicotine and Tobacco – Europe, London, England.

Poster – Regional

1. Gaalema, D.E., Linares Scott, T., **Heil, S.H.**, Coyle, M.G., Kaltenbach, K., Badger, G.J., Arria, A., Stine, S.M., Martin, P.R. & Jones, H.E. (2011). Differences in the profile of neonatal abstinence syndrome signs in methadone vs. buprenorphine-exposed infants. Presented at Psychiatry Research Day, Burlington, VT.
2. **Heil, S.H.**, Gaalema, D.E., Higgins, S.T., Sigmon, S.C., & Johnston, A.M. (2011). Infant pupil diameter in response to opioid administration. Presented at Psychiatry Research Day, Burlington, VT.
3. Lopez, A.A., Higgins, S.T. Higgins, **Heil, S.H.**, Washio, Y., Badger, G.J., Skelly, J.M., Lynch, M.E., Solomon, L.J., & Bernstein, I.M. (2011). Does depression interfere with contingency-management treatment for pregnant cigarette smokers? Presented at Psychiatry Research Day, Burlington, VT.
4. Higgins, T., Dougherty, A., & **Heil, S.** (2016). Long-acting reversible contraception insertion rates in women with Medicaid vs. private insurance in a clinic with a two-visit protocol. Presented at the University of Vermont Graduate Research Day, Burlington, VT.
5. Deans, S., Dougherty, A., Kayongo, A., Mundaka, J., Nassali, F., Sewanyana, J., Migadde, E., Kiyemba, R., Katali, E., Holcombe, S., **Heil, S.**, & Kalyesubula. (2017). Knowledge, attitudes, and use of family planning among rural women and men in Nakaseke District, Uganda. Presented at the University of Vermont College of Medicine Global Health Day, Burlington, VT.

Poster - National

1. **Heil, S.H.** & Wilson, J.F. (1992). Sex, gonadal hormone levels, and type of diet affect dietary self-selection in rats. Presented at the annual meeting of the Midwestern Psychological Association Poster Session, Chicago, IL.
2. **Heil, S.H.** & Cramer, C.P. (1993). Prolactin injections result in dose-dependent protein consumption in rats. Presented at the annual meeting of the International Society for Developmental Psychobiology Poster Session, Alexandria, VA.
3. **Heil, S.H.** & Cramer, C.P. (1995). Prenatal testosterone exposure increases the efficiency of nipple-shifting behavior in rats. Developmental Psychobiology, 28, 186.
4. **Heil, S.H.**, & Cramer, C.P. (1996). Activational hormones are not necessary for expression of prolactin's sexually dimorphic effects on food intake in rats. Developmental Psychobiology, 29, 37.
5. **Heil, S.H.**, & Cramer, C.P. (1996). Litter size and its effects on dam macronutrient self-selection during lactation. Society for Neuroscience.
6. **Heil, S.H.** (1997). Sexually dimorphic effects of prolactin on food intake by rats (Doctoral dissertation, Dartmouth College, 1997). Dissertation Abstracts International.
7. **Heil, S.H.**, Wang, R., Subramanian, M.G., & Jen, K.-L. C. (1998). Maternal alcohol abuse during lactation and dam nutritional status. Alcoholism: Clinical and Experimental Research, 22, 102A.
8. **Heil, S.H.**, Wang, R., & Subramanian, M.G. (1999). Prolactin secretion in lactating rats following chronic alcohol exposure: The effects of extended suckling. Journal of the Society for Gynecologic Investigation, 6 (Suppl. 1), 206A.

9. **Heil, S.H.**, Wang, R., & Subramanian, M.G. (1999). Growth retardation of pups following chronic alcohol exposure: Extended observations. Alcoholism: Clinical and Experimental Research, *23*, 109A.
10. **Heil, S.H.**, Subramanian, M.G., Hannigan, J.H., & Diamond, M.P. (1999). Effects of clamping blood alcohol levels on plasma hormone levels in normal subjects. Poster session at NIAAA Workshop, Indianapolis, IN.
11. Subramanian, M.G., **Heil, S.H.**, Hannigan, J.H., Kruger, M.P., & Diamond, M.P. (2000). Alcohol clamp studies in women: Blood alcohol and plasma hormone measurements. Alcoholism: Clinical and Experimental Research, *24*, 55A.
12. **Heil, S.H.**, & Higgins, S.T. (2000). Previous abstinence as a determinant of future abstinence from smoking. Retrieved from The College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
13. **Heil, S.H.**, Tidey, J.W., & Higgins, S.T. (2000). Effects of contingent reinforcement on smoking abstinence and nicotine withdrawal. Pharmacology, Biochemistry, and Behavior.
14. Laws, H.F., **Heil, S.H.**, Bickel, W.K., Higgins S.T., Faries, D.E., & Badger, G. (2001). Subjective responses to LY139603 (tomoxetine) and methylphenidate. Biological Psychiatry *49*, 70.
15. **Heil, S.H.**, Holmes, H.W., Bickel, W.K., Higgins, S.T., Badger, G., Laws, H.F., & Faries, D.E. (2001). Comparison of subjective effects of tomoxetine and methylphenidate. Retrieved from The College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
16. Higgins, S.T., **Heil, S.H.**, Sigmon, S.C., Wong, C.J., Donham, R., Anthony, S.L., & Badger, G.J. (2001). The role of CRA in the CRA+vouchers treatment for cocaine dependence. Retrieved from The College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
17. Plebani, J.G., Higgins, S.H., Alessi, S.M. & **Heil, S.H.** (2001). Relationship between CO cutpoint and cigarette smokers' ability to satisfy the criterion in an incentive-based abstinence study. Retrieved from The College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
18. **Heil, S.H.**, Levinson, S. & Higgins, S.T. (2001). Adaptive functioning in cocaine-dependent patients versus normal controls. Pharmacology Biochemistry and Behavior.
19. Schuh, K.J., Bymaster, F., Calligaro, D., Nisenbaum, E., Emmerson, P., Statnick, M., Leander, J., Kallman, M., Heil, S., & Bickel, W. Abuse liability assessment of atomoxetine, a nonstimulant pharmacotherapy for ADHD. (2002). The American Academy of Child and Adolescent Psychiatry.
20. **Heil, S.H.**, Higgins, S.T., Wong, C.J., Sigmon, S.C., Donham, R., Anthony, S., Dantona, R. & Badger, G.J. (2002). Further observations on the role of CRA in the CRA + vouchers treatment for cocaine dependence. Retrieved from The College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.

21. Higgins, S.T., **Heil, S.H.**, Plebani Lussier, J., Solomon, L., Abel, R.L., Lynch, M.E. & McHale, L. (2002). Effects of abstinence-contingent vouchers on cigarette smoking among pregnant women. Retrieved from The College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
22. Plebani Lussier, J., Higgins, S.T., Abel, R.L., Lynch, M.E., McHale, L., **Heil, S.H.**, & Solomon, L.J. (2002). Baseline smoking as a predictor of response to vouchers in pregnant women. Retrieved from The College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
23. **Heil, S.H.**, Sigmon, S.C., McHale, L., Badger, G. & Higgins, S.T. (2002). Increasing HIV/AIDS-related knowledge in cocaine-dependent patients. Pharmacology Biochemistry and Behavior.
24. **Heil, S.H.**, Higgins, S.T., Badger, G.J., Dantona, R., Donham, R., & Horn, S. (2003). Influence of voucher amount in the treatment of male and female cocaine-dependent outpatients. Retrieved from The College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
25. Higgins, S.T., **Heil, S.H.**, Solomon, L., Plebani-Lussier, J., Lynch, M.E., McHale, L., Simpson, L., & Glasmann, P. (2003). Voucher-based incentives for abstinence from cigarette smoking in pregnant and postpartum women. Retrieved from The College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
26. Plebani Lussier, J., Heil, S. H., & Higgins, S.T. (2003). Cotinine cutpoints during pregnancy and postpartum: Do they need to be different? Retrieved from The College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
27. Plebani Lussier, J., Higgins, S.T., Johnson, M.W., & **Heil, S.H.** (2003). Delay discounting in pregnant smokers: An initial examination. Pharmacology Biochemistry and Behavior.
28. Higgins, S.T., **Heil, S.H.**, Dantona, R., Donham, R., & Badger, G.J. (2004). Early and longer-term cocaine abstinence in outpatients. Retrieved from The College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
29. Bernstein, I.M., Mongeon, J.A., Badger, G.J., Lynch, M.E., **Heil, S.H.**, & Higgins, S.T. (2005). Reduced maternal smoking in the third trimester is associated with improved birth weight percentiles. Journal of the Society for Gynecologic Investigation.
30. **Heil, S.H.**, Higgins, S.T., Solomon, L., Bernstein, I.M., Lynch, M.E., McHale, L., Jacuzzi, N., & Dumeer, A. (2005). Voucher-Based Incentives for Abstinence from Cigarette Smoking in Pregnant and Postpartum Women. Retrieved from The College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
31. Higgins, S.T., **Heil, S.H.**, Badger, G.J., Mongeon, J.A., Solomon, L.J., McHale, L., & Bernstein, I.M. (2005). Biochemical Verification of Smoking Status in Pregnant and Recently Postpartum Women. Retrieved from The College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
32. Yoon, J.H., Higgins, S.T., & **Heil, S.H.** (2006). Repeated assessment of delay discounting by pregnant smokers for hypothetical outcomes. Retrieved from the Association for Behavior Analysis Convention Program Web site:
<http://www.abainternational.org/convention/program.aspx>.

33. **Heil, S.H.**, Remillard, A.M., & Higgins, S.T. (2006). Early abstinence's effect on later abstinence in cigarette smokers. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
34. Higgins, S.T., **Heil, S.H.**, Solomon, L.J., Bernstein, I.M., Dumeer, A.M., & Thomas, C.S. (2006). Early smoking status predicts smoking-cessation outcomes in pregnant women. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
35. Yoon, J.H., Higgins, S.T., **Heil, S.H.**, Thomas, C.S., & Sugarbaker, R.J. (2006). Delay discounting predicts postpartum relapse to cigarette smoking among pregnant women. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
36. Chivers, L., Higgins, S.T., White, R.M., Badger, G.J., & **Heil, S.H.** (2006). Modeling the effects of brief smoking lapses during the initial weeks of smoking cessation. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
37. McKerchar, T. L., **Heil, S. H.**, Johnson, M. W., & Higgins, S. T. (2007). Delay discounting of various commodities by cocaine-dependent outpatients: Comparison of two equations and associated measures of discounting. Presented at the annual meeting of the Society for Quantitative Analyses of Behavior, San Diego, CA.
38. **Heil, S.H.**, Trifiletti, L.C., & Jones, H.E. (2007). Comparison of characteristics of opioid-dependent pregnant women in rural and urban settings. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
39. Scott, T.L., **Heil, S.H.**, & Higgins, S.T. (2007). Self-report of psychopathology in a sample of pregnant smokers and pregnant quitters. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
40. McKerchar, T.L., **Heil, S.H.**, Sigmon, S.C., Dantona, R.L., & Higgins, S.T. (2007). Delay discounting of money, cocaine, cigarettes, and health in cocaine-dependent outpatients. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
41. Rogers, R., Higgins, S.T., **Heil, S.H.**, Thomas, C.S., & Vitale, R.M. (2007). Correspondence between changes in cigarette smoking and caffeine use among pregnant women. Retrieved from the College on Problems of Drug Dependence, Annual Meeting Program and Abstracts web page.
42. Bernstein, I.M., Solomon, L., **Heil, S.**, Lynch, M.E., Coutinho, Y., Thomas, C., Badger, G.J., & Higgins, S.T. Contingent Voucher Based Incentives to Reduce Maternal Smoking Improve Fetal Growth. Society for Gynecologic Investigation 2007 Reno NV.
43. Scott, T.L., **Heil, S.H.**, Higgins, S.T., Sigmon, S.C., & Jones, H.E. (2008). Examination of withdrawal symptoms in methadone- or buprenorphine-exposed infants. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
44. Stine, S., **Heil, S.**, Arria, A., O-Grady, K., Kaltenbach, K., Fischer, G., Martin, P., Coyle, M., Selby, P., & Jones, H. (2008). Characteristics of opioid-dependent pregnant women who

- accept or refuse participation in a clinical trial. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
45. Dunn, K.E., Sigmon, S.C., **Heil, S.H.**, & Higgins, S.T. (2008). Semi-quantitative buprenorphine testing in an ongoing study with prescription opioid abusers. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
 46. **Heil, S.**, Jones, H., Wagner, M., Martin, P., Fischer, G., Stine, S., Coyle, M., Selby, P., & Kaltenbach, K. (2008). Pregnancy intendedness in opioid-using pregnant women. Presented at the 116th Annual Meeting of the American Psychological Association, Boston, MA.
 47. Scott, T., **Heil, S.**, Holbrook, A. & Kaltenbach, K. (2008). Drug use differences in rural and urban opioid-dependent pregnant women. Presented at the 116th Annual Meeting of the American Psychological Association, Boston, MA.
 48. Sigmon, S.C., Dunn, K., **Heil, S.**, & Higgins, S.T. (2008). A behavioral intervention to reduce smoking among opioid maintenance patients. Presented at the 116th Annual Meeting of the American Psychological Association, Boston, MA.
 49. **Heil, S.H.**, Higgins, S.T., Solomon, L.J., & Bernstein, I.M. (2009). Characteristics associated with smoking severity during pregnancy. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
 50. Linares Scott, T., **Heil, S.**, Jones, H., Wagner, M., Fischer, G., Kaltenbach, K., Martin, P., Stine, S., Coyle, M., & Selby, P. (2009). Legal issues among drug-using pregnant women. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
 51. Herrmann, E., **Heil, S.**, Higgins, S., Solomon, L., & Bernstein, I. (2009). Smoking and health behavior beliefs among pregnant smokers and spontaneous quitters. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
 52. Washio, Y., Higgins, S.T., **Heil, S.H.**, Skelly, J.M., Badger, G.J., & Solomon, L.J. (2009). Low educational attainment and cigarette smoking during pregnancy. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
 53. Herrmann, E.S., **Heil, S.H.**, Higgins, S.T., Solomon, L.J., & Bernstein, I.M. (2010). Natural history of changes in cigarette smoking upon learning of pregnancy. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
 54. Saulsgiver, K., Dunn, K. Patrick, M., Sigmon, S., **Heil, S.**, & Higgins, S. (2010). A behavioral approach to smoking cessation among opioid-maintained patients. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
 55. Higgins, S.T., Washio, Y., Higgins, T.M., **Heil, S.H.**, Badger, G.J., Skelly, J.M., Solomon, L.J., Bernstein, I.M., & Lynch, M.E. (2010). Effects of treatment with voucher-based contingency management of maternal smoking, birth outcomes, and breastfeeding. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.

56. Patrick, M., Saulsgiver, K., Dunn, K., **Heil, S.H.**, Sigmon, S.C., & Higgins, S.T. (2010). Parametric evaluation of buprenorphine taper duration for prescription opioid abuse. Presented at the 1st annual Neuroscience, Behavior, and Health Research Forum, Burlington, VT.
57. Chisolm, M., Acquavita, S., Wilson-Murphy, M., Tuten, M., Leoutsakos, J., Heil, S., Kaltenbach, K., Martin, P.R., Winklbaaur, B., & Jones, H.E. (2011). A comparison of cigarette smoking profiles in opioid-dependent pregnant patients receiving methadone or buprenorphine. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
58. **Heil, S.H.**, Gaalema, D., Higgins, S.T., Sigmon, S.C., & Johnston, A. (2011). Infant pupil diameter in response to opioid administration. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
59. Gaalema, D., **Heil, S.**, Scott, T., Coyle, M., Kaltenbach, K., Jones, H., Martin, P., Stine, S., & Arria, A. (2011). Differences in the profile of neonatal abstinence syndrome signs in methadone- vs. buprenorphine-exposed infants. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
60. Unger, A., Jagsch, R., Bäwert, A., Winklbaaur, B., Martin, P.R., Coyle, M., Kaltenbach, K., **Heil, S.**, Stine, S., & Fischer, G. (2011). Absence of sex differences related to the neonatal abstinence syndrome among infants born to women in opioid agonist treatment. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
61. Stine, S.M., Thakur, P., Jones, H., Fisher, G., Kaltenbach, K., **Heil, S.**, Martin, P., Coyle, M., & Selby, P. (2011). Effect of cocaine on treatment outcomes in opioid-using pregnant women. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
62. Wilson-Murphy, M.M., Chisolm, M.S., Leoutsakos, J.S., Kaltenbach, K., **Heil, S.H.**, Martin, P.R., Stine, S.M., Coyle, M., Tuten, M., & Jones, H.E. (2011). Treatment completion in opioid-dependent pregnant patients randomized to agonist treatment: The role of intravenous drug use. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
63. Washio, Y., Higgins, S.T., **Heil, S.H.**, McKerchar, T.L., Badger, G.J., Skelly, J.M., & Dantona, R.L. (2011). Delay discounting as a predictor of treatment response among cocaine-dependent outpatients. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
64. Saulsgiver, K.A., Dunn, K., Sigmon, S., **Heil, S.**, & Higgins, S.T. (2011). Baseline delay discounting predicts response to a behavioral smoking intervention among opioid-maintained patients. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
65. Lopez, A.A., Higgins, S.T., **Heil, S.H.**, Washio, Y., Badger, G.J., Skelly, J.M., Lynch, M.E., Solomon, L.J., & Bernstein, I.M. (2011). Does depression interfere with contingency-management treatment for pregnant cigarette smokers? Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
66. Benningfield, M.M., Dietrich, M.S., Jones, H.E., Kaltenbach, K., **Heil, S.H.**, Stine, S.M., Coyle, M.G., Arria, A.M., Selby, P., Baewert, A., & Martin, P.R. (2011). Effects of anxiety

- and depression on treatment of opioid dependence during pregnancy. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
67. Gaalema, D., Bradstreet, M., Higgins, S., **Heil, S.**, & Bernstein, I.M. (2011). Using NicAlert® strips to validate smoking status in pregnant cigarette smokers. Presented at the 119th Annual Meeting of the American Psychological Association, Washington, DC.
68. **Heil, S.H.**, Johnston, A.M., Crocker, A.M., Metayer, J.S., & Meyer, M.C. (2012). Comparative effectiveness of methadone and buprenorphine for the treatment of opioid dependence during pregnancy: A retrospective cohort study. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
69. Gaalema, D.E., Higgins, S.T., Pepin, C.S., **Heil, S.H.**, & Bernstein, I.M. (2012). Illicit drug use among pregnant women enrolled in treatment for cigarette smoking cessation. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
70. Herrmann, E., **Heil, S.**, Higgins, S., Sigmon, S., Solomon, L., & Bernstein, I. (2012). Characterizing nicotine withdrawal in pregnant smokers. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
71. Lopez, A.A., Higgins, S.T., **Heil, S.H.**, Skelly, J.M., Lynch, M.E., Solomon, L.J., & Bernstein, I.M. (2012). Characterizing the relationship between smoking status and breastfeeding among newly postpartum women. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
72. **Heil, S.H.**, Herrmann, E.S., Higgins, S.T., Solomon, L.J., Sigmon, S.C., & Bernstein, I.M. (2012). Characterizing nicotine withdrawal in pregnant smokers. Presented at the 120th Annual Meeting of the American Psychological Association, Orlando, FL.
73. **Heil, S.H.**, Sigmon, S.C., Meyer, M.C., & Higgins, S.T. (2012). Improving effective contraceptive use among drug-dependent women: A feasibility study. *Contraception*, *86*, 308.
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81. Higgins, S.T., Washio, Y., Lopez, A.A., **Heil, S.H.**, Solomon, L.J., Lynch, M.E., Hanson, J., Higgins, T.M., Skelly, J., & Bernstein, I.M. (2013). Incentive-based treatment for pregnant smokers. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
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91. Meyer, A.C., Patrick, M.E., **Heil, S.H.**, Higgins, S.T., & Sigmon, S.C. (2014). Gender differences in smoking and treatment outcome among opioid-maintained smokers. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
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100. Bergeria, C. L., & **Heil, S.H.** (2015). Surveying lactation professionals regarding marijuana use and breastfeeding. Presented at the annual National Conference and Exhibition of the American Academy of Pediatrics, Washington, D.C.
101. Arger, C., **Heil, S.**, Sigmon, S., Tidey, J., Stitzer, M., Gaalema, D., DeSarno, M., Durand, H., Ruggieri, E., & Higgins, S. (2016). Validity of the Cigarette Evaluation Questionnaire in predicting the reinforcing effects of cigarettes that vary in nicotine yield under double-blind conditions. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
102. Davis, D., **Heil, S.**, Sigmon, S., Tidey, J., Stitzer, M., Gaalema, D., DeSarno, M., Durand, H., Tromblee, M., & Higgins, S. (2016). Investigating changes in smoking topography upon

- initial exposure to very low nicotine content cigarettes. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
103. Streck, J., Sigmon, S., **Heil, S.**, Stitzer, M., Tidey, J., Gaalema, D., DeSarno, M., Balas, K., Durand, H., & Higgins, S. (2016). Subjective effects of smoking among opioid-maintained individuals: Results from a pilot study examining reduced nicotine content cigarettes. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
 104. Higgins, S., **Heil, S.**, Sigmon, S., Tidey, J., Gaalema, D., Stitzer, M., Vandrey, R., Arger, C., Miller, M., & Pacek, L. (2016). Response to varying nicotine content levels in cigarettes: Acute effects in vulnerable populations. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
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 106. Bergeria, C.L., **Heil, S.H.**, Sigmon, S.C., Durand, H.J., Bunn, J., & Higgins, S.T. (2016). Comparing the Smoking Topography of Usual Brand Cigarettes in Pregnant and Non-Pregnant Smokers. Presented at the NIH Tobacco Regulatory Science Conference, Bethesda, Maryland.
 107. Matusiewicz, A.K., Melbostad, H.S., & **Heil, S.H.** (2016). Barriers to long-acting reversible contraceptive use among opioid-maintained women. Presented at the 9th annual International Women's and Children's Health and Gender Group conference, La Quinta, CA. Won "Best Poster" award.
 108. Matusiewicz, A.K., Melbostad, H.S., & **Heil, S.H.** (2016). Barriers to long-acting reversible contraceptive use among opioid-maintained women. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
 109. Ochalek, T.A., Pusey, J.D., Hruska, B., **Heil, S. H.**, Higgins, S.T., Rose, G., Moore, B.A., & Sigmon, S.C. (2016). Within-subject evaluation of interim buprenorphine vs. waitlist on illicit opioid use. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
 110. Bergeria, C.L., **Heil, S.H.**, Sigmon, S.C., Durand, H., & Higgins, S. (2016). Comparing smoking topography of usual brand cigarettes in pregnant and non-pregnant women. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
 111. Melbostad, H.S., Badger, G.J., Matusiewicz, A.K., & **Heil, S.H.** (2016). Contraceptive use among female smokers. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
 112. Ochalek, T.A., Hruska, B., **Heil, S. H.**, Higgins, S.T., Rose, G., Moore, B.A., & Sigmon, S.C. (2016). Interim buprenorphine treatment for reducing illicit opioid use during delays to treatment entry. Presented at the 124th Annual Meeting of the American Psychological Association, Denver, CO.
 113. Bergeria, C.L., **Heil, S.H.**, Sigmon, S.C., Durand, H., & Higgins, S. (2016). Comparing smoking topography of usual brand cigarettes in pregnant and non-pregnant smokers.

Presented at the 124th Annual Meeting of the American Psychological Association, Denver, CO.

114. Melbostad, H.S., **Heil, S.H.**, Matusiewicz, A.K., & Wachtel, D. (2016). Contraception use and pregnancy intention among opioid-maintained women. Presented at the 124th Annual Meeting of the American Psychological Association, Denver, CO.
115. Matusiewicz, A.K., Melbostad, H.S., & **Heil, S.H.** (2016). Barriers to long-acting reversible contraceptive use among opioid-maintained women. Presented at the 124th Annual Meeting of the American Psychological Association, Denver, CO.
116. **Heil, S.H.**, Matusiewicz, A.K., Melbostad, H.S., Sigmon, S.C., Meyer, M.C., & Higgins, S.T. (2016). Increasing effective contraceptive use among opioid-maintained women at risk for unintended pregnancy. *Contraception*, *94*, 403-404.
117. Higgins, T., Dougherty, A., & **Heil, S.H.** (2016). Long-acting reversible contraception insertion rates in women with Medicaid vs. private insurance in a clinic with a two-visit protocol. *Contraception*, *94*, 413. Won a "Top Poster Abstract" award.
118. Bergeria, C.L., **Heil, S.H.**, Sigmon, S.C., Bunn, J., & Higgins, S.T. (2016). Comparing the Smoking Topography of Usual Brand Cigarettes in Pregnant and Non-Pregnant Smokers. Presented at the annual Tobacco Centers of Regulatory Science Grantee Meeting, Bethesda, MD.
119. Arger, C.A., Taghavi, T., **Heil, S.H.**, Skelly, J., Tyndale, R.F., & Higgins, S.T. (2016). Influence of pregnancy on the nicotine metabolite ratio: Examining changes of nicotine metabolism and enzyme pathways during antepartum and postpartum. Presented at the annual Tobacco Centers of Regulatory Science Grantee Meeting, Bethesda, MD.
120. Streck, J.M., Davis, D.R., Bergeria, C.L., Bunn, J.Y., Sigmon, S.C., **Heil, S.H.**, Gaalema, D., & Higgins, S.T. (2016). Characterizing smokers who use American Indian reservation cigarettes. Presented at the annual Tobacco Centers of Regulatory Science Grantee Meeting, Bethesda, MD.
121. Villanti, A., Gaalema, D., Tidey, J., **Heil, S.**, Sigmon, S., Hughes, J., & Higgins, S. (2017). Co-occurring vulnerabilities and menthol use in U.S. young adult cigarette smokers: Findings from the 1st wave of the PATH study, 2013-2014. Presented at the annual Tobacco Centers of Regulatory Science Grantee Meeting, Bethesda, MD.
122. Bergeria, C., **Heil, S.**, Sigmon, S., Tidey, J., Gaalema, D., Hughes, J., Stitzer, M., Bunn, J., Miller, M., Davis, D., Streck, J., & Higgins, S. (2017). Characterizing responses to cigarettes with varying levels of nicotine in women vulnerable to smoking during pregnancy. Presented at the annual Tobacco Centers of Regulatory Science Grantee Meeting, Bethesda, MD.
123. Davis, D., Bergeria, C., Streck, J., Bunn, J., Gaalema, D., Heil, S., Sigmon, S., Stitzer, M., Tidey, J., & Higgins, S. (2017). Examining how users of mentholated and non-mentholated cigarettes rate Spectrum research and usual brand cigarettes. (2017). Presented at the annual Tobacco Centers of Regulatory Science Grantee Meeting, Bethesda, MD.
124. Deans, S., Dougherty, A., Kayongo, A., Mundaka, J., Nassali, F., Sewanyana, J., Migadde, E., Kiyemba, R., Katali, E., **Heil, S.H.**, & Kalyesubula, R. (2018). Knowledge, attitudes, and use of family planning in rural Uganda: Comparing the female and male

- perspective. Presented at the annual meeting of the Consortium of Universities for Global Health, New York, NY.
125. Melbostad, H.S., Hack, M.A., MacAfee, L.K., & **Heil, S.H.** (2018). Contraceptive knowledge of patients receiving medication for opioid use disorder. Presented at the 49th Annual Medical-Scientific Conference of the American Society of Addiction Medicine, San Diego, CA.
 126. Bergeria, C., **Heil, S.**, Sigmon, S., Tidey, J., Gaalema, D., Hughes, J., Stitzer, M., Durand, H., Bunn, J., Priest, J., Arger, C., Miller, M., Davis, D., Streck, J., Tromblee, M., & Higgins, S. (2018). Characterizing response to cigarettes with varying levels of nicotine in women vulnerable to smoking during pregnancy. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
 127. Streck, J., Sigmon, S., Parker, M., **Heil, S.**, Stitzer, M., Tidey, J., Gaalema, D., Bergeria, C., Davis, D., Naud, S., Hughes, J., & Higgins, S. (2018). Characterizing nicotine withdrawal across vulnerable populations: Data from a trial examining reduced nicotine content cigarettes. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
 128. Davis, D., Streck, J., Bergeria, C., Miller, M., Bunn, J., Gaalema, D., **Heil, S.**, Sigmon, S., Stitzer, M., Tidey, J., & Higgins, S. (2018). Examining the influence of mentholation on relative reinforcing efficacy of cigarettes at varying nicotine doses. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
 129. **Heil, S.**, Zvorsky, I., Kurti, A., Bernstein, I., & Higgins, S.T. (2018). Anticipated vs. actual postpartum contraceptive use among pregnant cigarette smokers. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
 130. Rey, C., Melbostad, H., Sigmon, S., MacAfee, L., Dougherty, A., & **Heil, S.** (2018). Familiarity, knowledge and barriers to long-acting reversible contraceptives among opioid-maintained women. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
 131. Melbostad, H., Rey, C., Sigmon, S., MacAfee, L., Dougherty, A., & **Heil, S.** (2018). Contraceptive knowledge of men and women receiving medication-assisted treatment for opioid use disorder. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
 132. Bergeria, C., **Heil, S.**, Sigmon, S., Tidey, J., Gaalema, D., Hughes, J., Stitzer, M., Arger, C., Miller, M., Durand, H., Bunn, J., Priest, J., Davis, D., Streck, J., Skelly, J., Tromblee, M., & Higgins, S. (2018). Assessing correspondence between subjective effects measures and concurrent choice data in a laboratory study evaluating the effects of cigarettes with varying levels of nicotine. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
 133. Davis, D., Bergeria, C., Streck, J., Miller, M., Bunn, J., Gaalema, D., **Heil, S.**, Sigmon, S., Stitzer, M., Tidey, J., & Higgins, S. (2018). Impact of mentholation as a moderator of nicotine dose on relative reinforcing and subjective effect. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
 134. Streck, J., Sigmon, S., Parker, M., Stitzer, M., Tidey, J., **Heil, S.**, Gaalema, D., Bergeria,

- C., Davis, D., Priest, J., Barrows, A., Rothman, M., Hughes, J., & Higgins, S. (2018). Subjective effects of cigarettes varying in nicotine content among opioid-maintained individuals. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
135. Harfmann, R., **Heil, S.**, Zvorsky, I., Nighbor, T., Bernstein, I., & Higgins, S. (2019). Anticipated vs. actual postpartum contraception use among pregnant cigarette smokers. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
136. Streck, J., Sigmon, S., **Heil, S.**, Stitzer, M., Tidey, J., Gaalema, D., Bergeria, C., Davis, D., Parker, M., Priest, J., Hughes, J., & Higgins, S.T. (2019). Investigating tobacco withdrawal in smokers with opioid dependence and other vulnerabilities. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
137. Melbostad, H., Shepard, D., Rey, C., Matusiewicz, A., Sigmon, S., MacAfee, L., Higgins, S., & **Heil, S.** (2019). Preliminary analyses of benefits and costs of family planning interventions for women enrolled in medication treatment for opioid use disorder. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
138. Zollman, G., O'Meara, A., & **Heil, S.** (2019). Family planning among female syringe exchange clients. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
139. Harfmann, R., **Heil, S.**, Zvorsky, I., Nighbor, T., Bernstein, I., & Higgins, S. (2019). Anticipated vs. actual postpartum contraception use among pregnant cigarette smokers. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
140. Rey, C., Kurti, A., Badger, G., Cohen, A., & **Heil, S.** (2019). Stigma, discrimination, treatment effectiveness, and policy support: Comparing behavior analysts' views on substance use disorders and mental illness. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
141. Higgins, S.T., Kurti, A.N., Nighbor, T., Redner, R.N., Solomon, L., **Heil, S.**, Lynch, M.E., Markesich, C.T., Johnson, H.K., Skelly, J., Bernstein, I., & Phillips, J. (2020). A comparative effectiveness trial examining financial incentives for smoking cessation among pregnant women. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
142. Melbostad, H., Wachtel, D., Lipke, K., Matusiewicz, A., Rey, C., MacAfee, L., & **Heil, S.** (2020). Safety and tolerability of hormonal contraception among women receiving medication treatment for opioid use disorder. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
143. Rey, C., Dolan, J., Melbostad, H., Bergeria, C., & **Heil, S.** Breastfeeding and marijuana use: Recommendations from the field post-marijuana legalization in Vermont. (2020). Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
144. Oliver, A., Melbostad, H., Matusiewicz, A., Rey, C., Badger, G., & **Heil, S.** (2020). Verified contraceptive use among a sample of women receiving medication for opioid use

- disorder and at risk for unintended pregnancy. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
145. Harfmann, R., MacAfee, L., Melbostad, H., Rey, C., Rylant, D., & **Heil, S.** (2020). Perceptions of contraceptive autonomy and coercion in the setting of financial incentives for women with opioid use disorder. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
146. Oliver, A.C., DeSarno, M., Irvin, C.G., Kaminsky, D.A., **Heil, S.H.**, Sigmon, S.C., Tidey, J.W., Gaalema, D.E., Lee, D., Bunn, J.Y., Davis, D.R., Streck, J.M., Harfmann, R., Gallagher, T., & Higgins, S.T. (2021). Fractional exhaled nitric oxide (FENO) outcomes from a randomized clinical trial examining reduced nicotine content cigarettes among daily smokers with psychiatric conditions or socioeconomic disadvantage. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
147. Harfmann, R.F., Bunn, J.Y., Davis, D.R., Streck, J.M., Bergeria, C.L., Parker, M.A., **Heil, S.H.**, Sigmon, S.C., Gaalema, D.E., Tidey, J.W., Lee, D., Hughes, J., Barrows, A., Markesich, C., & Higgins, S.T. (2021). Characterizing use of e-cigarettes in a randomized trial investigating reduced nicotine content cigarettes among smokers with psychiatric conditions or socioeconomic disadvantage. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
148. Wiley, R., Oliver, A., Snow, M., Bunn, J., Barrows, A., Tidey, J., Lee, D., Sigmon, S., Gaalema, D., **Heil, S.**, Markesich, C., Villanti, A., & Higgins, S.T. (2021). The impact of the COVID-19 pandemic on smoking among vulnerable populations. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
149. Harfmann, R., **Heil, S.**, Bunn, J., Tidey, J., Snell, M., Davis, D., Streck, J., Bergeria, C., Parker, M., Sigmon, S., Gaalema, D., Lee, D., Hughes, J., Markesich, C., Orr, E., & Higgins, S. (2021). Examining the effect of very low nicotine content cigarettes on weight among smokers with psychiatric conditions or socioeconomic disadvantage. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
150. Oliver, A., & **Heil, S.** (2021). Assessing the impact of the Office of Research on Women's Health 2010 Strategic Plan: Changes in research on substance use interventions for pregnant women from 2000 to 2019. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
151. Melbostad, H., Harfmann, R., & **Heil, S.** (2021). Psychosocial issues among women who use illicit drugs during their pregnancy. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
152. Browning, K., DeSarno, M., Davis, D., Streck, J., Bergeria, C., Harfmann, R., Parker, M., **Heil, S.**, Sigmon, S., Gaalema, D., Tidey, J., Lee, D., Hughes, J., Tetreault, H., Markesich, C., & Higgins, S. (2021). The relation between the Brief Wisconsin Inventory of Smoking Dependence Motives, individual differences in nicotine consumption, and the relative reinforcing value of cigarettes in vulnerable populations of smokers. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
153. **Heil, S.**, Schafrick, N., Shaw, J., Harder, V., Villanti, A., Smith, M., Ryer, J., & Sigmon, S. (2022). Beliefs about medications for opioid use disorder among healthcare practitioners

and community stakeholders in rural New England. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.

154. Wiley, R., Bunn, J., Barrows, A., Tidey, J., Lee, D., Sigmon, S., Gaalema, D., **Heil, S.**, Villanti, A., & Higgins, S. (2022). COVID wariness, protective behaviors, smoking, and cigarette purchasing patterns among vulnerable populations. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
155. Katz, B., Gaalema, D., Tidey, J., Sigmon, S., **Heil, S.**, Lee, D., DeSarno, M., Higgins, S. (2022). Discrepancies in the relation between smoking and performance across different tests of executive function. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
156. Gaalema, D., Tidey, J., Sigmon, S., **Heil, S.**, Lee, D., DeSarno M., & Higgins, S. (2023). Effects of nicotine dose in cigarettes on symptoms of depression and anxiety. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
157. Kock, L., Higgins, S., Chen, F.F., & **Heil, S.** (2023). Relationships between socioeconomic position and quitting smoking among pregnant women: A longitudinal assessment from Waves1-5 of the Population Assessment of Tobacco and Health Study. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
158. Harfmann, R., **Heil, S.**, Cannon, L., Kusunoki, Y., Dalton, V., & MacAfee, L. (2023). Reasons for past abortions among women in treatment for opioid use disorder. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
159. Katz, B., Middleton, W., Gaalema, D., Tidey, J., Sigmon, S., **Heil, S.**, Lee, D., DeSarno, M., & Higgins, S. (2023). Cigarette smoking and executive function: Experimental effects of very-low-nicotine-content cigarettes. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
160. Andraka-Christou, B., Williams, M., Buksbaum, Karkkainen, J., Stein, B., Batchelder, S., Peck, K., **Heil, S.**, Rawson, R., Jacobs, S., Higgins, S., & Sigmon, S. (2023). State laws regulating provision of incentives related to substance use. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.

Poster – International

1. Laws, H.F., **Heil, S.H.**, Bickel, W.K., Higgins, S.T., Faries, D.E., & Badger, G. (2001). Subjective responses to LY139603 (atomoxetine) and methylphenidate. European Neuropsychopharmacology, 11(Suppl. 3), s318.
2. Higgins, S.T., **Heil, S.H.**, Rogers, R.E., Solomon, L.J., & Badger, G.J. (2009). Voucher-based contingency management in treating pregnant cigarette smokers. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
3. Arger, C., Taghavi, S., Higgins, S., Tyndale, R., & **Heil, S.** (2017). Examining the time course of the nicotine metabolite ratio and enzyme pathways during antepartum and postpartum. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.

4. Bergeria, C., Higgins, S., Sigmon, S., Durand, H., Bunn, J., & **Heil, S.** (2017). Comparing smoking topography of usual brand cigarettes in pregnant and non-pregnant smokers. Retrieved from the Society for Research on Nicotine and Tobacco Past Annual Meetings web page.
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9. Bergeria, C., **Heil, S.**, Kurti, A., Ochalek, T., & Higgins, S. (2017). Cannabis use in pregnant and recently postpartum cigarette smokers and nonsmokers. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
10. Sigmon, S., Streck, J., **Heil, S.**, Stitzer M., Tidey, J., Gaalema D., & Higgins, S. (2017). Subjective effects of smoking among opioid-maintained individuals: Results from a pilot study examining reduced nicotine content cigarettes. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
11. Higgins, S., **Heil, S.**, Sigmon, S., Tidey, J., Gaalema, D., Hughes, J., Stitzer, M., Durand, H., Bunn, J., Priest, J., Arger, C., Patrick, M., Bergeria, C., Davis, D., Streck, J., Reed, D., Skelly, J., & Tursi, L. (2017). Evaluating reduced-nicotine standards on the addiction potential of cigarettes in vulnerable populations. Retrieved from the College on Problems of Drug Dependence Annual Meeting Program and Abstracts web page.
12. Melbostad, H.S., Matusiewicz, A.K., Rey, C.N., Badger, G.J., MacAfee, L.K., Sigmon, S.C., Higgins, S.T., and **Heil, S.H.** (2018). Increasing contraceptive use among women with opioid use disorder at risk for unintended pregnancy. Presented at the 5th International Conference on Family Planning, Kigali, Rwanda.

Patents Issues for Pending

Not applicable

Other Creative Activities

Quality Improvement and Patient Safety Activities

Vermont Oxford Network

Expert Discussant, iNICQ 2013: Controversies in Caring for Infants and Families
Affected by Neonatal Abstinence Syndrome

Faculty Member, iNICQ 2014: Structuring Success in the Care of Infants and Families
Affected by Neonatal Abstinence Syndrome

Expert Discussant, iNICQ 2015: Universal Training Solutions Improving Outcomes for
Infants and Families Affected by Neonatal Abstinence Syndrome

SUMMARY OF SCHOLARLY ACTIVITIES

Throughout my career, my overarching interest has been in conducting rigorous, empirical research that will improve the lives of women with substance use disorders and their children. A primary area of interest and expertise is opioid use disorder during pregnancy. I was the PI of the University of Vermont site of the MOTHER (Maternal Opioid Treatment: Human Experimental Research) trial, an eight-site, international, randomized clinical trial comparing the safety and efficacy of methadone and buprenorphine for the treatment of opioid use disorder during pregnancy. The results indicated that buprenorphine-exposed infants had significantly better outcomes and were published in the New England Journal of Medicine (Jones, Kaltenbach, Heil et al., 2010). These data have influenced clinical practice guidelines in many countries, including the United States, Norway, Denmark, Sweden, and Australia. Among many other publications in this area, I collaborated with Marjorie Meyer, MD, in the Department of Obstetrics, Gynecology, and Reproductive Sciences, to replicate the MOTHER trial results in a large (600+) retrospective cohort study of pregnant women receiving medication for opioid use disorder who delivered at University of Vermont Medical Center (Meyer et al., 2015), extending the generalizability of the randomized trial results. I have pursued a related line of research developing an intervention to reduce the rate of unintended pregnancy, which is a startling 86% among opioid-dependent women (Heil et al., 2011). In a pilot trial funded by an R34 Clinical Trial Planning Grant, none of the women in the experimental condition experienced unintended pregnancy vs. 20% of control condition participants (Heil et al., 2016). A subsequent R01-funded, three-arm randomized clinical trial tested the efficacy of different components of the intervention. The results indicated a graded reduction in unintended pregnancy (5% among women who received the full intervention vs. 17% of those who received part of the intervention vs. 22% of control condition participants) and were published in JAMA Psychiatry (Heil et al., 2021). I have also been a Co-Investigator on a number of grants with opioid-dependent patients, including trials examining smoking cessation, taper durations, and an interim treatment approach for patients on waitlists for agonist maintenance.

Another major area of interest has been reducing harm among women who smoke cigarettes, especially during pregnancy. I have been a Co-Investigator on a series of clinical trials to develop an incentive-based intervention for pregnant cigarette smokers. Most pregnant smokers are unable to quit, and cessation rates produced by existing interventions are low (< 20%). Our research group has reliably shown that an incentive-based intervention significantly increases smoking cessation (38% vs. 10% in experimental vs. control conditions, respectively) (Higgins, Heil et al., 2004; Heil et al., 2008; Higgins et al., 2010, 2014, 2022). US states, including Wisconsin and Oregon, and the National Health Service of the UK have tested this approach in routine clinical practice. I am also currently the Project PI on a P50 center grant funded by the National Institute on Drug Abuse and the Food and Drug Administration (FDA) that is investigating whether reducing the nicotine content of cigarettes reduces their addiction potential among less educated women of childbearing age. Results of this work, which includes the only research done with pregnant women and these products (e.g., Heil et al., 2020) will have significant impact on tobacco regulatory science given that FDA has the authority to regulate the nicotine content of cigarettes (i.e., Family Smoking Prevention and Tobacco Control Act of 2009).

Finally, I also serve as Associate Director of a large, multi-state Health Resources and Services Administration Regional Center of Excellence that disseminates evidence-based services and resources in rural northern New England.

INVITED PRESENTATIONS

Regional

1997	Reproductive Endocrinology Group, Department of Obstetrics and Gynecology, Wayne State University <u>Sexually dimorphic effects of prolactin on food intake by rats</u>	Detroit, MI
1998	Developmental Psychobiology Group, Department of Psychology, Wayne State University <u>Interactions between mating systems and parent/offspring relationships in East African mammals</u>	Detroit, MI
2010	General Clinical Research Center, Fletcher Allen Health Care <u>Opioid addiction and pregnancy: The MOTHER Study</u>	Burlington, VT
2012	Vermont Improving Care for Opioid-exposed Neonates (ICON) project statewide meeting <u>Treating pregnant opioid-dependent women and their infants: The latest research.</u>	Northfield, VT
2013	Vermont Center on Behavior and Health Lecture Series <u>Buprenorphine for treating opioid-dependent pregnant women: Behavioral pharmacology in action</u>	Burlington, VT
2013	University of Vermont Department of Obstetrics, Gynecology, and Reproductive Sciences Annual Research Retreat <u>Improving effective contraceptive use among opioid-maintained women</u>	Burlington, VT
2015	University of Vermont Department of Obstetrics, Gynecology, and Reproductive Sciences Research Seminar <u>Improving effective contraceptive use among opioid-maintained women: Stages I & II</u>	Burlington, VT
2017	New Hampshire Charitable Foundation <u>Behavioral economic approaches to increasing contraceptive use among opioid-maintained women</u>	Hanover, NH
2018	University of Vermont Department of Obstetrics, Gynecology, and Reproductive Sciences Annual Research Retreat <u>Family planning among women with opioid use disorder</u>	Burlington, VT
2020	Vermont Center on Behavior and Health Lecture Series <u>Reducing unintended pregnant among women receiving medication for opioid use disorder</u>	Burlington, VT

National

2004	Future Directions in Contingency Management Research, meeting sponsored by the National Institute on Drug Abuse at University of Vermont	Burlington, VT
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<u>Voucher-based treatment of cigarette smoking in pregnant and recently postpartum women with S.T. Higgins</u>		
2008	College on Problems of Drug Dependence Mini-Conference entitled "Women and Smoking: Understanding Socioeconomic Influences" <u>An overview of effective substance abuse treatment practices for other substance use disorders among disadvantaged women</u>	Annapolis, MD
2011	U.S. Navy Conference entitled "Incentives and Health" <u>Incentives to promote family planning</u>	College Park, MD
2012	Ohio Valley Node of the National Institute on Drug Abuse's Clinical Trials Network <u>Opioid dependence during pregnancy: Improving neonatal and maternal outcomes</u>	Teleconference
2012	Participant in scientific forum, "Toxicology in pregnancy" (J. Tolosa, chair) held at the 32nd Annual Meeting of the Society for Maternal-Fetal Medicine <u>Voucher-based contingency management for smoking cessation during pregnancy</u>	Dallas, TX
2012	Johns Hopkins University's Behavioral Pharmacology Research Seminar Series <u>Improving outcomes among opioid-exposed neonates</u>	Baltimore, MD
2012	Merrill Palmer Skillman Institute for Child and Family Development, Wayne State University <u>Promoting smoking cessation during pregnancy</u>	Detroit, MI
2012	Division of Reproductive Health Seminar, Centers for Disease Control and Prevention <u>Financial incentives for increasing smoking cessation and improving other aspects of reproductive health among disadvantaged women.</u>	Atlanta, GA
2012	New Fellows Symposium at the 120 th annual meeting of the American Psychological Association <u>Opioid dependence during pregnancy: Improving neonatal and maternal outcomes</u>	Orlando, FL
2012	Expert Meeting on Perinatal Illicit Drug Use, Centers for Disease Control and Prevention <u>Evidence-based psychosocial treatments for illicit drug use during pregnancy</u>	Atlanta, GA
2013	Participant in conference, "Behavior Change, Health, and Health Disparities," sponsored by the Vermont Center on Behavior and Health, University of Vermont <u>Financial incentives to promote more effective contraceptive use among opioid-maintained women</u> with Hand, D.J., Sigmon, S.C., Meyer, M.C., & Higgins, S.T.	Burlington, VT

2014	Participant in 2 nd annual Behavior Change, Health, and Health Disparities conference sponsored by the Vermont Center on Behavior and Health, University of Vermont <u>Improving prescription contraceptive use among opioid-maintained women</u> with Hand, D.J., Sigmon, S.C., Meyer, M.C., & Higgins, S.T.	Burlington, VT
2015	Participated in 3 rd annual Behavior Change, Health, and Health Disparities conference sponsored by the Vermont Center on Behavior and Health, University of Vermont <u>Improving effective contraceptive use among opioid-maintained women: Stages I & II</u>	Burlington, VT
2015	Participated in panel session on “Reproductive Health Throughout the Lifespan” as part of the 8 th annual International Women’s and Children’s Health and Gender Group conference <u>Improving effective contraceptive use among opioid-maintained women: Stages I & II</u>	Phoenix, AZ
2017	Participated in 5 th annual Behavior Change, Health, and Health Disparities conference sponsored by the Vermont Center on Behavior and Health, University of Vermont <u>Smoking among women of reproductive age</u>	Burlington, VT
2018	Expert Meeting on Integration of Substance Use Disorders and Family Planning, Office of Population Affairs <u>Integrating family planning into substance use disorder treatment settings</u>	Washington, DC
2018	Georgia Family Planning System Annual Meeting <u>Family planning and opioids</u>	Jekyll Island, GA
2018	Columbia University Medical Center Division on Substance Use Disorders Seminar Series <u>Decreasing unintended pregnancy among opioid-maintained women</u>	New York, NY
2022	Participated in 10 th annual Behavior Change, Health, and Health Disparities conference sponsored by the Vermont Center on Behavior and Health, University of Vermont <u>Improving family planning among women receiving medication for opioid use disorder</u>	Burlington, VT
International		
2015	Norwegian Centre for Addiction Research, University of Oslo <u>The MOTHER study and beyond</u>	Oslo, Norway