VCU Office of the Vice President for Research and Innovation

Date: Monday, December 4, 2023 3:41:41 PM Print Close

ID: HM20018580 **HM20018580** View: SF - Study Identification

HM20018580 - Alison Breland
Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Study Identification

1. * **Select the Principal Investigator:**
   Alison Breland

2. * **Study Title:**
   Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

3. * **Is this a student or trainee project in which activities will be carried out by that individual under your supervision (for example, dissertation or degree-required projects):**
   ○ Yes
   ● **No**

4. * **Please select the primary department or center that this study is being conducted under:**
   Psychology

5. **Select the VCU IRB numbers assigned to studies that are:**
   1. **Associated with this study**
   2. **Research registries this study will utilize**
   3. **Previously submitted versions of this study (closed, withdrawn, auto-withdrawn studies)**

ID	Title	PI
[redacted]		
[redacted]		

6. **Select all individuals who are permitted to edit the IRB protocol and should be copied on communications (study staff will be entered later). These individuals will be referred to as protocol editors:**

Last Name	First Name	E-Mail	Phone	Mobile
[redacted]				

7. * **Select one of the following that applies to the project (selection will branch to new pages):**
   Note: VCU IRB offers guidance for many types of studies, including secondary data analysis studies, internet research, registries, EFIC, HUD, and Emergency Use protocols.
   See *https://research.vcu.edu/human_research/guidance.htm*

- [x] **Research Project or Clinical Investigation [*most exempt, expedited, and full board research studies]**
- [ ] Exception from Informed Consent (EFIC) for Planned Emergency Research
- [ ] Humanitarian Use of Device for Treatment or Diagnosis
- [ ] Humanitarian Use of Device for Clinical Investigation
- [ ] Emergency Use of Investigational Drug, Biologic or Device
- [ ] Treatment Use (Expanded Access to Investigational Product for Treatment Use)
- [ ] Center or Institute Administrative Grant Review
- [ ] Request for Not Human Subject Research Determination (i.e. request a letter confirming that IRB review is not required)

Federal Regulations

1. * **Is this a FDA regulated study?**

   FDA regulated research includes all clinical investigations involving a test article and a human subject(s) that has been submitted for approval to the FDA or may be submitted in the future.
   Check Yes if
   • the study involves an IND/IDE, abbreviated IDE, IND/IDE exemption, HUD, expanded access, or is otherwise subject to 21 CFR 56,
   • the study involves a test article being administered or dispensed to subjects NOT according to a clinicians' medical judgment but rather, per the study protocol, OR
   • the study does not involve a test article but intends to provide safety or efficacy data to the FDA.

   ○ Yes
   ● **No**

2. * **Is this study supported by the Department of Defense (DoD):**
   ○ Yes
   ● **No**

3. * **Check if any of the following funding sources apply to this research (including Direct and/or Indirect funding):**
   ☐ Department of Education
   ☐ Department of Justice
   ☐ Environmental Protection Agency
   ☑ **None of the above**

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IRB Panel Setup

1. * **To which IRB is this study being submitted for review?**

- (●) **VCU IRB**
- ( ) WCG IRB
- ( ) NCI Central IRB
- ( ) Advarra IRB
- ( ) Other IRB

2. * **Is this study transitioning to review by another IRB?**

- ( ) Yes - transitioning from VCU IRB to an external IRB (WCG, CIRB, Other)
- ( ) Yes - transitioning from an external IRB (WCG, CIRB, Other) to VCU IRB
- (●) **No or not applicable**

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Review Setup

1. * **Select which study type best describes the majority of the study. Your response will help determine which IRB panel should review this.**
   - ○ Bio-Medical Research
   - ● **Social/Behavioral/Education (SBE) Research**

2. * **Which option(s) best describe the way(s) this study's procedures will be conducted? (Select all that apply.) This information may be used by the IRB in triaging studies during an emergency.**
   - ☑ **In-person interactions / interventions with participants**
   - ☐ Remote interactions / interventions with participants
   - ☐ Secondary data/specimen analyses with or without contact with study participants

3. * **Would it be possible to convert in-person activities in your study to remote if there is an approved contingency protocol?**
   No, not possible to convert to remote activities

4. * **Does this study involve greater than minimal risk:**
   - ● **Yes** ○ No

5. * **Review type requested: (subject to IRB approval):**
   - ● **Full Board**
   - ○ Expedited
   - ○ Exempt

6. * **Is this study initiated by a VCU investigator or a sponsor:**
   - ● **VCU Investigator initiated**
   - ○ Sponsor or industry initiated

The IRB has determined that the selected types of anticipated individual and social benefit apply to this study

The below information is read-only to investigators, and the categories are set by the IRB during review. All categories will appear blank until the IRB has made a determination. If a category is not checked, it does not apply to this study. This information may be used by the IRB in triaging studies during an emergency situation.
Scientific benefit

ID: HM20018580 **HM20018580** View: SF2 - Initial Setup Complete

HM20018580 - Alison Breland
Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Initial Setup Complete

Protocol Progress:
● **INITIAL SETUP**
② BACKGROUND, RATIONALE & GOALS
③ RESEARCH PLAN
④ CONSENT PLAN
⑤ RISKS, PRIVACY & CONFIDENTIALITY
⑥ POPULATIONS WITH SPECIAL CONSIDERATIONS
⑦ INSTITUTIONAL REQUIREMENTS
⑧ DOCUMENTS

Click Continue below to go to the next section

Background, Rationale and Goals

1. * **Describe the study's background and what is currently known from the scientific literature, including citations, or upload a citation list in document upload. Use lay language whenever possible.**

   The FDA now has the authority to regulate all tobacco products, including electronic cigarettes (ECIGs). FDA's "public health standard" requires consideration of how tobacco product regulation will influence risks and benefits to tobacco product users and non-users. These issues are particularly salient for ECIGs due to their increasing popularity (USDHHS, 2016). As the Surgeon General noted, "E-cigarette use among U.S. youth and young adults is now a major public health concern" (USDHHS, 2016, p. vii). Addressing this public health concern through regulation will be challenging because ECIGs are an evolving product class with great variability in nicotine content, device power, and flavors (USDHHS, 2016). These characteristics can influence user behavior including subjective effects, liquid consumption, and nicotine delivery (Hiler et al., 2017; Wagener et al., 2017). Also, puffing behavior (i.e., puff topography, including puff number and duration) helps to determine the amount of nicotine delivered to the user and thus ECIG subjective effects (e.g., Hiler et al., 2017). Regulatory action intended to influence ECIG effects must account for these factors.

   If FDA is to understand how tobacco product regulation will influence the risks and benefits to ECIG users and tobacco cigarette smokers, it may learn much from robust scientific methods that predict the l kely population- level impact of potential regulatory action. To understand the benefit of predicting regulatory impact, consider the European Union's (EU's) Tobacco Products Directive 2014/40/EU that limits ECIG liquids to <20 mg/ml nicotine to allow "for a delivery of nicotine that is comparable to the permitted dose of nicotine derived from a standard cigarette…". This directive does not account for variability in product characteristics and user behavior that work against its intent and may increase public health risk. For instance, consider device power: early ECIG models were powered at 10 W or less, but current models achieve 150 W or more (Wagener et al., 2017). Ten puffs from high power ECIGs (mean=70 W) filled with low nicotine concentration liquid (mean=4 mg/ml) can meet and sometimes exceed the nicotine delivery of a tobacco cigarette (Wagener et al., 2017).

   Use of these "third generation" ECIGs is on the rise (e.g., Barrington-Trimis et al., 2017) and, relative to lower power devices, they can lead users to consume more nicotine-containing liquid (e.g., Wagener et al., 2017; Etter, 2016). In addition, based on information on e-cigarette forums, individuals are using both low and higher-nicotine concentration liquids (as high as 35 - 50 mg/ml) in their "third generation" devices.

   Taken together, these results suggest that, when higher power devices are available, the intended consequences of the EU directive are unlikely to be realized and unintended consequences (more toxicants inhaled) are likely because users can buy high power devices that lead users to consume more liquid, and deliver nicotine more efficiently, even when paired with liquids <20 mg/ml nicotine. The ability to predict the consequences of regulatory action might help FDA craft polices that meet their intent while limiting unintended consequences l ke these. Indeed, if FDA had scientific methods that could predict these population-level outcomes in advance, these methods could be used to generate objective data to guide the development of potential regulation. Then, by the time data-guided regulations are enacted, they will have been crafted to maximize intended effects and minimize unintended consequences. Our goal is to provide these methods to FDA. To do so, we examine hypotheses related to the effects on user behavior of three potential regulatory actions: limiting nicotine concentration (ongoing study in HM20012738), constraining nicotine flux (nicotine yield/unit time; described here), and reducing flavor availability (these will be tested in other studies). We then use results from the controlled clinical lab testing descr bed here, along with results from other studies, to generate predictions about how these potential regulatory actions might impact the population, and then test our predictions at the population level (in a separate study not described in this protocol).

   References:
   Etter JF. (2016). A longitudinal study of cotinine in long-term daily users of e-cigarettes. Drug Alcohol Depend. 160:218-21.

   Hiler M, Breland A, Spindle T, Maloney S, Lipato T, Karaoghlanian N, Shihadeh A, Lopez A, Ramôa C., Eissenberg, T. (2017). Electronic cigarette user plasma nicotine concentration, puff topography, heart rate, and subjective effects: The influence of liquid nicotine concentration and user experience. Experimental and Clinical Psychopharmacology. 25(5):380-392.

   USDHHS (2016). E-cigarette Use Among Youth and Young Adults: A Report of the Surgeon General. Atlanta, GA:USDHHS, CDC, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

   Wagener TL, Floyd EL, Stepanov I, Driskill LM, Frank SG, Meier E, Leavens EL, Tackett AP, Molina N, Queimado L. (2017). Have combust ble cigarettes met their match? The nicotine delivery profiles and harmful constituent exposures of second-generation and third-generation electronic cigarette users. Tob Control. 26(e1):e23-e28.

2. * **Describe the study hypothesis and/or research questions. Use lay language whenever possible.**
   The purpose of this study is to determine differences in nicotine delivery, use behavior, (puff topography), and subjective effects, and physiological effects, when cigarette smokers or e-cigarette users use an electronic cigarette

with constant device settings (30 Watts) and different e-liquid concentrations (0 mg/ml, 6 mg/ml, 15 mg/ml, and 30 mg/ml).

3. * **Describe the study's specific aims or goals. Use lay language whenever possible.**
The aims of this study are to better understand how electronic cigarettes with different liquid nicotine concentrations affect and constant device settings affect a variety of measures, such as how much nicotine is delivered to participants' blood, how their puffing behavior changes, and how they feel.

This aim involves manipulating liquid nicotine concentration, testing the hypothesis that abstinence suppression (how participants feel), liquid consumption, and nicotine delivery will be lower as nicotine concentration is lowered, but these effects will be offset by higher power.

4. * **Describe the scientific benefit or importance of the knowledge to be gained:**

The benefits of this research are of a scientific nature, which should in the long-term benefit society at large. In particular, the use of ECIGs has become increasingly popular, especially among individuals aged 18-24. New regulations are being targeted at this age group (and other age groups) and need to be tested in this age group before implementation. The overarching theme of the Center for the Study of Tobacco Products is to provide regulators (FDA and others) with a suite of tools that allow them to test regulations before they are implemented to determine if those regulations will have their intended consequences without causing harm (i.e., unintended consequences). If we cannot study the age group the regulations are targeting, we cannot test potential regulations effectively.

In addition, there is a lack of information about ECIGs and their effects. The results of this study will inform future work regarding the physiological and subjective effects of ECIG use in cigarette smokers.

5. * **Describe any potential for direct benefits to participants in this study:**
None

6. * **Describe any potential for direct social impact in this study . For example, any engagement with specific communities to respond to community-identified needs, or ways the study will strengthen the well-being of the specific communities if applicable:**
There is no direct social impact related to this study.

7. **Upload a supporting citation list if applicable:**

	Document Name	Document	Version	Date Modified	Uploaded By	Type	Approved
View	Information about blood pressure	BP results P2 flux 8.18.2022.docx	0.01	8/19/2022 2:28 PM	[redacted]	Study reminders/communications	Yes
View	Consent Form	P2 FLUX_consent 3.30.2022 changes accepted revised 5.4.2022.pdf	0.28	5/26/2022 3:57 PM	[redacted]	Consent/Assent/Information Sheet	Yes
View	PPT with Consent	P2FLUX_Consent_Virtual_5.4.22.pptx	0.08	5/4/2022 4:11 PM	[redacted]	Consent/Assent/Information Sheet	Yes
View	Participant Communication - Phone, email, and text scripts	Phone_e-mail_text scripts_3.30.2022 changes accepted revised 5.4.2022.docx	0.22	5/4/2022 3:23 PM	[redacted]	Recruitment/Advertising	Yes
View	Questions about COVID-19	COVID_Questions_P2 5.4.2022.docx	0.07	5/4/2022 3:22 PM	[redacted]	Other	Yes
View	In-Person Screening Survey	IPSBaselineSurvey_P2FluxStudy_accepted changes 1.3.2022.docx	0.16	1/3/2022 12:47 PM	[redacted]	Research Measure	Yes
View	Referral program card example	Referral program card example revised 11.17.2021.docx	0.02	11/17/2021 2:22 PM	[redacted]	Recruitment/Advertising	Yes
View	Session Measures	Session Documents_U54_Study2_10.21.2021 changes accepted.doc	0.07	10/25/2021 2:10 PM	[redacted]	Research Measure	Yes
View	Research Match contact messages	P2 FLUX_Research Match Contact Message revised 10.25.2021.docx	0.03	10/25/2021 1:53 PM	[redacted]	Recruitment/Advertising	Yes
View	Puff limiting software snapshots	P2-Flux Puff Limiting Software.docx	0.01	3/31/2021 8:02 AM	[redacted]	Other	Yes

Study Population

1. * **Provide the maximum number of individuals that**

   1. May participate in any study interaction or intervention (Including screening, consenting, and study activities)
   AND/OR
   2. You obtain any data/specimens about (regardless of identifiability)

   at VCU and at other sites under the VCU IRB's oversight. See the help text for additional guidance.
   75

2. **If this is a multi-Center Project, what is the maximum anticipated number of subjects across all sites?**
   N/A

3. * **Provide justification for the sample size by explaining how you arrived at the expected number of participants and why this number is adequate for answering the research questions:**
   We conducted a power analysis for this study using data from a previously collected study with similar measures (Hiler et al., 2017). We obtained effect sizes from this previous study and used them to determine how many participants would be needed in the current study, in order to detect an effect if one exists. Results revealed that for all within-subject analyses, 32 participants would be required to achieve power >80% (this means that there is an 80% probability that we would detect an effect if one exists), given a standard Type I error rate of 0.05 (this is the probability of detecting an effect when no effect exists).

   It is possible that we would consent up to 75 participants in order to obtain 32 participants who complete the entire study.

4. * **List the study inclusion criteria:**
   All participants must be healthy (determined by self-report), between the ages of 18-55, willing to provide informed consent, and attend the lab and abstain from tobacco/nicotine as required. Participants must agree to use designated products according to the study protocol. Participants must use (1) at least 5 cigarettes per day OR (2) e-cigarettes daily OR (3) dual use of cigarettes and e-cigarettes (defined as daily use of one product and at least weekly use of the other product). Participants must have a 'positive' cotinine cassette result to verify nicotine use.

   Please note that beginning July 1, 2020, per Chapter 524 of the 2020 Acts of Assembly, which the Governor signed on March 31, 2020, Virginia law now permits us to recruit individuals aged 18-55. This law "Provides an exception to the law prohibiting possession of tobacco products, nicotine vapor products, or alternative nicotine products by a person less than 21 years of age when such possession is part of a scientific study being conducted by an organization for the purpose of medical research to further efforts in cigarette and tobacco use prevention and cessation and tobacco product regulation, provided that such medical research has been approved by an institutional review board pursuant to applicable federal regulations or by a research review committee."

5. * **List the study exclusion criteria:**
   Individuals with the following self-reported current, diagnosed medical condition(s) will be excluded automatically: uncontrolled high blood pressure above 160/100 (via self-report or observed at screening), heart-related conditions (e.g., recent heart attack/stroke, coronary heart disease), severe immune system disorders (e.g., HIV/AIDS, multiple sclerosis), respiratory disorders (e.g., COPD, asthma), kidney diseases, liver diseases (e.g., cirrhosis), or seizures.

   Individuals with other self-reported current, diagnosed medical conditions (e.g., diabetes, thyroid disease, lyme disease) will be considered for exclusion after consultation with the PI and medical monitor. We ask a variety of questions about participants' medical conditions that are not necessarily exclusionary in order to be able to consult with the medical monitor about these conditions. Participants with any medical condition/medication that may affect participant safety, study outcomes, or biomarker data will be excluded based on these consultations.

   Participants with self-reported current, diagnosed psychiatric conditions, and who are currently under the care of a physician for psychiatric conditions, or who report current psychiatric treatment or psychotropic medication use will be excluded.

   Individuals with past month use of cocaine, opioids, benzodiazepines, and methamphetamine or other illegal substances (other than marijuana) will be excluded. Individuals who report using marijuana greater than 15 days in the past 30 and/or alcohol greater than 25 days in the past 30 days will be excluded. Participants who choose not to answer questions related to inclusion/exclusion criteria will be excluded. Women will be excluded if they are breast-feeding or test positive for pregnancy (by urinalysis) at screening. Participants who weigh less than 110 pounds will also be excluded. Those who intend to quit tobacco/nicotine use in the next 30 days will be excluded and referred to cessation treatment.

   In addition, participants who have previously participated in a study with exactly the same manipulations of ECIG type, setting, and liquid concentration will be excluded. Specifically, participants who have participated in HM20018290 will

not be eligible to participate in this protocol. Staff from this protocol will work with staff from HM20018290 (who are also listed on this protocol) to assure that there is no cross-participation between participants.

6. * **Will individuals with limited English proficiency be included in or excluded from this research?**

- ○ Included
- ○ Excluded - safety concerns if participants are unable to communicate with the study team
- ○ Excluded - instruments/measures only validated in English
- ● **Excluded - no prospect of direct benefit to individual participants**
- ○ Excluded - minimal risk study
- ○ Excluded - lack of budget/resources for translation and interpretation [provide an explanation in next question]
- ○ Excluded - other reason [provide an explanation in next question]

7. **Justify the inclusion and exclusion criteria if you are either targeting, or excluding, a particular segment of the population / community. Provide a description of the group/organization/community and provide a rationale.**
N/A

ID: HM20018580 **HM20018580**

View: SF2 - Background, Rationale & Goals Section Complete

HM20018580 - Alison Breland
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Background, Rationale & Goals Section Complete

Protocol Progress:
● **INITIAL SETUP**
● **BACKGROUND, RATIONALE & GOALS**
③ RESEARCH PLAN
④ CONSENT PLAN
⑤ RISKS, PRIVACY & CONFIDENTIALITY
⑥ POPULATIONS WITH SPECIAL CONSIDERATIONS
⑦ INSTITUTIONAL REQUIREMENTS
⑧ DOCUMENTS

Click Continue below to go to the next section

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Study Procedures

1. * **Describe the study hypothesis and/or research questions. Use lay language whenever possible.**
The purpose of this study is to determine differences in nicotine delivery, use behavior, (puff topography), and subjective effects, and physiological effects, when cigarette smokers or e-cigarette users use an electronic cigarette with constant device settings (30 Watts) and different e-liquid concentrations (0 mg/ml, 6 mg/ml, 15 mg/ml, and 30 mg/ml).

2. * **Describe the study's specific aims or goals. Use lay language whenever possible.**
The aims of this study are to better understand how electronic cigarettes with different liquid nicotine concentrations affect and constant device settings affect a variety of measures, such as how much nicotine is delivered to participants' blood, how their puffing behavior changes, and how they feel.

   This aim involves manipulating liquid nicotine concentration, testing the hypothesis that abstinence suppression (how participants feel), liquid consumption, and nicotine delivery will be lower as nicotine concentration is lowered, but these effects will be offset by higher power.

3. * **Choose all types of recruitment materials that may be used and upload them below:**
   - [x] **E-mail invitations**
   - [ ] Phone Solicitation scripts (i.e. cold calls or random-digit-dialing)
   - [x] **Flyers, Mailed Letters or Newspaper/TV/Radio Ads**
   - [ ] TelegRAM announcements
   - [ ] Website text
   - [ ] Study-specific web sites (provide the design and text)
   - [ ] Social Media
   - [ ] EPIC MyChart Patient Portal research study descriptions
   - [ ] Psychology Research Participant Pool (SONA) study descriptions
   - [ ] Scripts for announcements made to groups
   - [x] **Other recruitment document**
   - [ ] No recruitment materials

4. * **If Other was selected above, describe the recruitment document that will be used:**
Any postings on internet sites will use exactly the same information that is presented in those previously approved flyers we will use advertisements that are already approved as part of the CSTP registry: HM20002567; there is not a study-specific flyer for this study.

   Scripts for communicating with participants (included with this usage protocol) are unique to this study.

   ResearchMatch.org will be utilized as a recruitment tool for this protocol. ResearchMatch.org is a national electronic, web-based recruitment tool that was created through the Clinical & Translational Science Awards Consortium in 2009 and is maintained at Vanderbilt University as an IRB-approved data repository (see IRB #090207).

5. * **Describe the study procedures/methods for identifying and recruiting participants. Address all of the following three aspects of recruitment in your response.**

   1. Identification of potentially eligible participants or secondary data/specimens of interest.
   - What database(s) will be queried to identify secondary data/specimens
   - How VCU Informatics or VCU IRDS will be used for cohort identification (when applicable, see help text)
   - How potential participants' contact information will be obtained

   2. Recruitment procedures to invite participation in the study (when applicable):
   - How each of the written or verbal recruitment materials and reminders (selected above) will be used
   - Who will contact, approach, or respond to potential participants
   - Locations where recruitment procedures will take place
   - The timing and frequency of recruitment attempts

3. Eligibility screening prior to consent and how those activities will be carried out (when applicable)

See the help text for additional guidance.
Participants will be recruited via word-of-mouth and advertisements that will be posted as flyers around the community, in newspapers, on Craigslist, and possibly on social media sites such as Facebook and/or Twitter. Any postings on internet sites will use exactly the same information that is presented in those previously approved flyers (we will use advertisements that are already approved as part of the CSTP registry: HM20002567; there is not a study-specific flyer for this study).

Potential participants will make the initial contact via telephone by calling the phone number provided on the advertisements, or by going to the website provided on the advertisements. For the initial screening, we will use a multi-study screening process/registry described in HM 20002567. Because we use this process for multiple studies, participants are actually screened for all ongoing studies at one time. For this reason, the script is vague. Participants who appear eligible for this usage protocol based on the initial screening questionnaire (in HM20002567 and attached) are then contacted (either via phone), told more about this study using only language from the approved consent form (via phone or e-mail), and if interested, participants are invited for an in-person screening, where consent for this study will be obtained.

Participants must complete the screening process described in HM20002567 in order to participate in this usage protocol, and must agree to be part of the CSTP registry in order to participate in this usage protocol (because we do not have study-specific recruitment materials for this study).

Participants who have already consented to participate in the CSTP registry may be contacted via phone or e-mail and told about this study. Individuals who are participants in other, ongoing CSTP studies (participants with whom we have a pre-existing relationship) may be verbally referred to this study, and directed to either call the laboratory or visit the website indicated on the advertisements/flyers, if they are interested.

We will also use Research Match to recruit participants (see attached contact messages).

Participants who are eligible and who choose to enroll may be contacted via text for appointment reminders if they agree (see scripts).

6. * **Does this study have a separate protocol document (i.e. a multisite or sponsor's protocol) that contains a detailed description of the study's methodology?**

- ○ Yes
- ● **No**

7. * **Since a separate protocol document is not uploaded, describe the proposed research using language understandable to those IRB committee members whose expertise is not scientific. The description must include:**

1. A statement explaining the study design
2. A detailed description of all the procedures that will be followed to carry out the study, preferably in sequential order, and in sufficient detail that the study's methods could be replicated
3. The schedule and frequency of when and how procedures will be conducted (e.g. in person, online, phone, paper, etc.)
4. A description of all research measures/tests/interventions that will be used, including analyses/tests conducted on specimens/biological samples (if applicable)

See the help text for additional guidance
Participants will first be screened via phone or online, via a multi-study screening process/registry described in HM20002567 (see attachment "Registry consent form and questions"). Participants are automatically screened for all ongoing CSTP studies, but participants can tell study staff if they are interested in screening for a particular study only, and study staff will make a note of this preference.

Because there are no specific pre-in-person screening procedures for this study, all interested participants must go through the CSTP registry and agree to join that registry. All screening data collected from participants who choose to join the registry will be used in this study.

Participants who appear eligible will then be scheduled for an in-person screening visit (the in-person screening visit is part of this protocol, not part of the registry process). Upon arrival for the in-person screening visit, participants will be asked questions about poss ble COVID-19 symptoms/exposure. If answers to the questions are all "no", participants will be escorted to a session room, where they will provide informed consent if they choose to participate. The consent form will be read to participants either using a pre-recorded voice-over Power Point presentation, or in person by research staff, and participants will have the opportunity to ask questions to research staff via Zoom (for communication between the participant and staff from inside the session room to outside the session room) both during the presentation and afterwards. Signed consent will be obtained on a paper form. After consent, participants will be asked to complete other forms (see in-person screening forms: ICF, In-person screening survey). Participants will be asked for a urine sample that will be tested for cotinine (a metabolite of nicotine) and pregnancy (for participants who indicate their sex assigned at birth as female) and this information will be recorded on the Biochemical test/vitals form. Participants will also be able to view other questionnaires (document labeled "session measures"), via computer, and the study equipment. Study equipment includes the monitor for blood pressure and heart rate, as well as equipment for monitoring puffing behavior (a computer, tubing, and a mouthpiece that is attached to the ECIG when participants are using it). We may also take a photo (with no identifying information) of the participant's own brand cigarette pack, to aid in our efforts to purchase their own brand cigarettes.

Participants with blood pressure at the in person screening that is 140/90 or higher will be given information about blood pressure (see document).

After screening and informed consent, elig ble participants will enroll in this study, which is modeled on our previous work (e.g., Spindle et al., 2016; Hiler et al., 2017). A total of 32 participants are needed to complete the study. Once enrolled, participants will attend the lab for four additional experimental sessions (approximately 3 hours each) where they use an “open system” ECIG (Kanger Sub Box Mini and/or a Kangertech Sub Box Mini tank connected to hardware and/or software to limit puff duration) set to 30 watts, which will contain either 0mg, 6mg, 15 mg, or 30 mg nicotine-containing unflavored, unsweetened nicotine salt e-liquid. The design of this study is within-subjects, thus, all participants will complete four sessions that differ by the concentration of nicotine in the liquid. Sessions will be ordered by Latin-square. A Latin-square is a way of ordering conditions in a within-subjects study so that no condition follows another condition more than once within a given "square". This is different from random ordering but is preferred in studies with a small N.

The sessions will occur no more than 2 days per week and will be separated by at least 48 hours. The approximate total time that participants will be in the laboratory is 12.5 hours (30 minutes for screening and 12 hours for sessions). This does not include the 12 hours before each session that we ask participants to abstain from any nicotine/tobacco containing products.

During each session, participants will first complete a 10-puff product use period with the ECIG assigned for that session (2 second duration limit for each puff, using hardware and/or a computer program), then a 30-minute ad lib product use period, and then a cigarette/e-cigarette challenge paradigm. Sessions will be preceded by 12 hours tobacco/nicotine abstinence (to measure the extent to which each device/liquid combination suppresses nicotine/tobacco abstinence symptoms). In all sessions, participants will use topography-measurement equipment (a mouthpiece attached to the ECIG that is attached to a computer via tubing; the participant then puffs on the mouthpiece). Other outcomes include plasma nicotine, cardiovascular response (heart rate), and subjective effects (direct effects of the ECIG and nicotine, abstinence symptoms).

More specifically, upon arrival at the laboratory for each session, participants’ breath CO will be measured to ensure compliance with the overnight abstinence criteria (for cigarette smokers only: CO must be either < or equal to half of the CO [ppm] that the participant had at the in-person screening visit, or, if 10 ppm or less at screening, it must be less than or equal to 5 ppm before a session can begin). Once deemed abstinent, participants will begin a 1-hour waiting period. During this time, participants cannot eat although water, movies, and/or magazines will be provided. We have recently instituted this 1-hour waiting period in other studies, because we find, after looking at plasma nicotine levels which are analyzed months after participants complete studies, that some participants do not comply with the 12-hour nicotine/tobacco abstinence requirement. Adding this 1-hour waiting period ensures that all participants are abstinent for at least one hour before the session begins. After the 1-hour waiting period, physiological monitoring equipment will be attached (arm blood pressure cuff, pulse oximeter placed on finger), and a blood pressure reading will be obtained. Then the BP cuff will be removed (pulse oximeter remains) and an IV catheter will be inserted into a forearm vein of the participant, and a 30-minute rest period will begin. This rest period allows us to measure resting heart rate immediately before product administration. A detailed timeline of the sessions is described below. Please note that because catheter insertion can be difficult, we will attempt to insert a catheter no more than three times in one day, and if all three attempts are unsuccessful, the session will be discontinued, with payment as outlined in the consent and compensation section.

The subjective questionnaires ("session questionnaires") will be administered at each time point: Direct Effects of Vaping Questionnaire, Direct Effects of Nicotine Questionnaire, Hughes-Hatsukami Questionnaire, the General Labeled Magnitude Scale, and the Labelled Hedonic Scale. These questionnaires measure how participants feel after vaping and after nicotine administration, as well as nicotine/tobacco abstinence symptoms they may be experiencing, and how using the ECIG felt to them. All of these questionnaires will be administered via computer or RedCap with the exception of the General Labeled Magnitude Scale and the Labeled Hedonic Scale, which may be administered via paper and pen, or via RedCap.

The cigarette/e-cigarette challenge paradigm is a procedure in which participants will be given a 5 minute time period in which they are allowed to smoke their own brand cigarette or vape their own brand e-cigarette as much or as little as they want. Preferred product will be assessed at the in-person screening visit. For cigarette smokers, study staff will provide the participant with their own brand cigarettes, a lighter, and an ash tray. For e-cigarette users, participants will be asked to provide their own e-cigarette and liquid, as it is not feas ble for our group to purchase these given the huge variation in devices and liquids. Latency to start the first puff and number of puffs will be recorded visually by study staff.

Experimental session timeline (times approximate):
Participant arrives, CO test to confirm tobacco abstinence
0 Hr 00 1-hour waiting period
1 Hr 00 Attach physio equipment, obtain BP reading, insert venous catheter, 30-minute rest period begins
1 Hr 30 Subjective effects questionnaires, baseline blood sample 1
1 Hr 35 10 puffs from ECIG (30s inter-puff interval), begin topography measurement
1 Hr 40 Blood sample 2 (immediately after last puff), subjective effects questionnaires
2 Hr 00 Blood sample 3, subjective effects questionnaires, ad lib use period begins
2 Hr 30 Ad lib use period ends, blood sample 4, subjective effects questionnaires, end topography measurement
2 Hr 40 Cigarette or own brand e-cigarette challenge paradigm, cigarette/e-cigarette use
2 Hr 45 Subjective effects questionnaires, blood sample 5
2 Hr 55 Remove Catheter, obtain BP reading, stop Physio Monitoring, Payment
3 Hr 00 Release

Three months following the final in-person session, participants will be administered one follow-up survey via phone

(verbally administered), email (participant completes survey online), or text (participant completes survey online) regarding their cigarette and e-cigarette use behaviors (See "Follow-Up Survey").

8. * **The IRB only reviews research activities, so indicate for each of the study activities described in the question above or in the protocol which activities are:**

   - Being performed exclusively for research purposes (i.e. they would not otherwise be done apart from this study) VERSUS.
   - Alterations of routine activities/procedures (e.g. the study is altering the timing, frequency, method, location, amount, etc.) VERSUS.
   - Being done for other purposes and whose data/results will be used secondarily in the study (e.g. standard medical or psychological tests, routine education practices, quality improvement initiatives, etc.).
   See the help text for additional guidance

   All procedures are performed exclusively for research purposes.

9. **If applicable, describe alternatives (research or non-research) that are available to potential participants if they choose not to participate in this study:**
   N/A

10. **Upload any supporting tables or documents (e.g. protocol documents, figures/tables, data collection forms, study communications/reminders):**

    Upload ALL instruments/guides that will be used or that participants will experience (i.e. see, hear, complete), including measures, scripts/questions to guide interviews, surveys, questionnaires, observational guides, etc,:

    Upload ALL recruitment and screening materials, including such as ads, flyers, telephone or in-person scripts, letters, email invitations, TelegRAM announcements, and postcard reminders, screening scripts, screening forms, and screening measures:

	Document Name	Document	Version	Date Modified	Uploaded By	Type	Approved
View	Information about blood pressure	BP results P2 flux 8.18.2022.docx	0.01	8/19/2022 2:28 PM	[redacted]	Study reminders/communications	Yes
View	Consent Form	P2 FLUX_consent 3.30.2022 changes accepted revised 5.4.2022.pdf	0.28	5/26/2022 3:57 PM	[redacted]	Consent/Assent/Information Sheet	Yes
View	PPT with Consent	P2FLUX_Consent_Virtual_5.4.22.pptx	0.08	5/4/2022 4:11 PM	[redacted]	Consent/Assent/Information Sheet	Yes
View	Participant Communication - Phone, email, and text scripts	Phone_e-mail_text scripts_3.30.2022 changes accepted revised 5.4.2022.docx	0.22	5/4/2022 3:23 PM	[redacted]	Recruitment/Advertising	Yes
View	Questions about COVID-19	COVID_Questions_P2 5.4.2022.docx	0.07	5/4/2022 3:22 PM	[redacted]	Other	Yes
View	In-Person Screening Survey	IPSBaselineSurvey_P2FluxStudy_accepted changes 1.3.2022.docx	0.16	1/3/2022 12:47 PM	[redacted]	Research Measure	Yes
View	Referral program card example	Referral program card example revised 11.17.2021.docx	0.02	11/17/[redacted]	[redacted]	Recruitment/Advertising	Yes
View	Session Measures	Session Documents_U54_Study2_10.21.2021 changes accepted.doc	0.07	10/25/2021 2:10 PM	[redacted]	Research Measure	Yes
View	Research Match contact messages	P2 FLUX_Research Match Contact Message revised 10.25.2021.docx	0.03	10/25/2021 1:53 PM	[redacted]	Recruitment/Advertising	Yes
View	Puff limiting software snapshots	P2-Flux Puff Limiting Software.docx	0.01	3/31/2021 8:02 AM	[redacted]	Other	Yes
View	Follow-Up Survey	P2 FLUX_Follow-up survey_1.7.2021_clean.docx	0.07	1/12/2021 12:55 PM	[redacted]	Research Measure	Yes

Project Details

An intervention includes both physical procedures by which information or biospecimens are gathered (e.g., venipuncture) and manipulations of the subject or the subject's environment that are performed for research purposes.

An interaction includes communication or interpersonal contact between investigator and subject. It may include in-person, online, written, or verbal communications.

Secondary information/biospecimens are information or biospecimens that have been or will be collected for some other "primary" or "initial" activity and that will be used secondarily in the research study.

1. * **Select all of the following types of interventions that apply to this study (selections will branch):**
   - [x] **Social/Behavioral interventions or experimentation / Tasks / Environmental manipulations**
   - [ ] Deception (misleading participants through false or incomplete information)
   - [ ] Drug(s) / Biologics / Supplement(s) / Other Compounds (investigational products or products whose administration is dictated by the study protocol and not per the physician's clinical judgment)
   - [ ] IV contrast administration for research-related imaging (will branch to the Drugs page)
   - [ ] Placebos
   - [ ] Safety and/or effectiveness evaluation of Bio-Medical Device(s), including in-vitro diagnostic devices/assays, mobile medical apps, software functions, and HUDs used in clinical investigations
   - [ ] Washout Periods
   - [ ] Expanded Access – Treatment Use of an Investigational Product
   - [x] **Medical or Surgical Procedures (eg: physical exam, clinical procedures, scans, etc)**
   - [x] **Specimen/biological sample collection**
   - [ ] None of the Above

2. * **Select all of the following types of interactions and methods of data collection that apply to this study (selections will branch):**
   - [x] **Surveys / Questionnaires /Written responses to questions (including data entry)**
   - [x] **Active Internet data collection (i.e. using the internet to collect data, including online surveys, data collection via Zoom, apps, etc.)**
   - [ ] Passive Internet data collection (i.e. passively observing online behavior, bots)
   - [ ] Interviews / Focus Groups / Verbal responses to questions
   - [x] **Audio / Video recording or photographing participants**
   - [ ] Observations
   - [ ] Educational Settings/Assessments/Procedures
   - [ ] None of the Above

3. * **Select all types of recordings that will be made:**
   - [x] **Audio**
   - [x] **Video**
   - [ ] Photographs

4. * **Describe the purpose of the recordings, who will be recorded and when such recordings will occur:**
   Please note that we will NOT be recording audio or video from Zoom communication, but were advised to check these boxes anyway based on a previous, similar protocol. The purpose of using Zoom for audio and video is to facilitate communication between the participant and the research assistant, without the research assistant needing to enter the session room.

5. * **Select all types of secondary information and/or specimens that apply to this study (selections will branch): See the help text for definitions.**

- [ ] Individually Identifiable Health Information (PHI)
- [ ] Secondary data/specimens NOT from a research registry or repository
- [x] **Information/specimens from a research registry or repository (Usage Protocol)**
- [x] **Information/specimens originally collected for a previous research study**
- [ ] Publicly available information/specimens
- [ ] Government-generated or collected information that was or will be obtained for nonresearch activities [only applicable to research conducted by or on behalf of a Federal department or agency]
- [ ] No secondary data/specimens will be used

ID: HM20018580 **HM20018580**

View: SF2 - Behavioral Intervention/Task Details

HM20018580 - Alison Breland
Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Behavioral Intervention/Task Details

This page asks for details about the social/behavioral intervention, task, or environmental manipulation in the research.

Interventions include both physical procedures by which information is gathered and manipulations of the subject or the subject's environment that are performed for research purposes. This might include activities such as playing computer games, performing a task, thought/cognition activities, environmental manipulations, and educational activities.

If the study only involves surveys, interviews, or secondary data collection, go back to the Project Details page and uncheck "Social/Behavioral interventions or experimentation / Tasks / Environmental manipulations" in Question 1.

1. * **Describe the duration of the social/behavioral intervention, task, or environmental manipulation:**
   Four sessions that are about 3 hours long.

2. * **Describe any potential harms or discomforts that participants could experience during the intervention activity:**
   In this section I describe only the potential harms or discomforts participants could experience from behavioral aspects of the intervention (i.e., not from blood draws) per the recommendation of the IRB reviewer. It is difficult to separate behavioral effects from other effects, but I have also not included the effects of nicotine abstinence or nicotine administration.

   Participants may find the monitoring equipment uncomfortable.

   Participation in research might involve some loss of privacy. There is a small risk that someone outside the study could see and misuse information about participants.

   The study questionnaires ask personal questions that are sensitive in nature. Participants may refuse to answer any question that makes them feel uncomfortable.

3. * **Will the intervention activity be physically invasive or painful?**
   ○ Yes
   ● **No**

4. * **Describe the impact the intervention activity will have on participants, including the nature and duration of any impact(s):**
   Participants will be using an ECIG that contains nicotine, so they may experience the effects of ECIG use which could include sweating, lightheadedness, dizziness, nausea, and nervousness, although these are less likely in individuals who use nicotine-containing products regularly. All of the participants are experienced cigarette smokers. The duration of these impacts is the length of the session.

5. * **In the investigator's opinion, is there any reason to think that the participants will find the intervention activity offensive or embarrassing? Explain why or why not.**
   No

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Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Sample Collection Details

1. * Select all of the types of samples that will be collected as part of this study.

- [ ] Amniotic Fluid
- [x] **Blood**
- [ ] Buccal Smears
- [ ] Saliva
- [ ] Tissue
- [x] **Urine**
- [ ] Stool
- [ ] Other

2. * Select all of the methods of blood collection that will be utilized in this study:

- [ ] Individual Needle Stick(s)
- [x] **Indwelling Catheter Placed Solely for This Study (note: study will be referred to full board for initial review)**
- [ ] Indwelling Catheter Placed for Other Reason(s) (note: study will be referred to full board for initial review)
- [ ] Blood Collected at the Same Time as Non-Research Blood Collection(s)
- [ ] Other

3. * In order to collect urine, will an indwelling catheter be placed solely for the research study:

- ○ Yes
- ● **No**

4. * Describe how the sample will be collected and the collection schedule. For each type of sample, include information about

- The procedures that will be followed to collect the sample
- The role(s) of the individuals who will collect the sample
- The volume/size range of the sample
- The timing and frequency of sample collection

Urine will be collected at the in-person screening to test for cotinine and pregnancy (pregnancy test for women only). Urine will not be stored for later use. Upon arrival at the CSTP for the research session, participants' breath CO will be measured to ensure compliance with the overnight abstinence criteria (i.e., CO less than or equal to half of the value at the in-person screening). Blood will be collected via intravenous catheter 5 times at each session (7ml each time), for a total of 20 samples per person in the entire study (140 ml in total). Blood will not be collected more than 2 times per week.

5. * Will genetic testing or genetic analyses be conducted on any of the samples:

- ○ Yes
- ● **No**

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Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Active Internet Data Collection

1. * **Describe the platform/technology chosen for collecting the data and transmitting data securely over the internet. If proposing a non-VCU approved platform, give the rationale for selecting the technology instead of a VCU-approved platform.**
   The in-person screening questionnaires, questionnaires administered during sessions, and the follow-up survey will be administered via REDCap. All of the data will be stored in REDCap, and viewing will be restricted to those personnel associated with this protocol (listed under personnel).

   There are several reasons for choosing RedCap. First, electronic administration of forms is more efficient than paper forms and leads to less data entry (and possible errors). Second, RedCap is a secure way to collect data from participants.

2. * **Describe how data will be linked or unlinked to identifiers including email addresses, names, and/or IP address.**
   Data will be linked to participant IDs, dates of birth, email addresses, phone numbers, and first names.

3. * **How will you protect your data collection from fraudulent responses:**

4. * **Is there an alternative method for completion of the data collection other than the internet?**
   - (●) **Yes**
   - ( ) No

5. * **If yes, describe the alternative(s).**
   Paper forms.

6. * **Describe how individuals will be able to skip or not answer particular questions. If any questions are mandatory, provide justification.**
   Participants do not have to answer any particular question that they do not want to answer. If a participant does not want to answer a question, they can inform study staff who can note this and remove answers (some of our questionnaires do not have an option to skip the question because it is difficult to add this option in REDCap without making the forms confusing, and also, if we make all the questions in REDCap optional, we find that this leads to participants missing questions by mistake).

7. **If not including children, describe any procedures used to verify that research participants are adults.**
   We ask participants for their age and date of birth several times (telephone or online screening, in-person screening) and verify that the answers are the same. We will also check IDs during the screening to verify that the participant is eligible.

HM20018580 - Alison Breland
Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Secondary Data/Specimen Details

1. * **Describe the source(s) and nature of the information/specimens being obtained. This response should:**

   a. Identify where the data/specimens will come from (e.g., another researcher's registry, pathology lab, commercial source, medical records, etc.); and
   b. List what types of specimens will be obtained (when applicable); and/or
   c. List all data elements that will be obtained (when applicable). A data collection form or other documentation may be uploaded and referenced here.
   Contact information and eligibility requirements are obtained from this registry. Elig bility questions include information about cigarette and electronic cigarette use, alcohol, and drug use, health issues, and medication use. This data is used for screening and eligibility purposes.

   We may also ask participants who are currently participating in other, ongoing studies at the CSTP if they are interested in participating in this study. There is a script for this in the documents section. Interested participants will be asked to complete the in-person screening visit for this study.

2. * **Describe whether any agreement exists between you and data/specimen provider that states you will never have access to the ability to identify the participants (i.e. access to identifiers or the code key) and that you will not attempt to re-identify individuals.**
   The registry contains identifying information such as names. If a participant enrolls in this study, they are given an alpha-numeric code. We do plan to link this alphanumeric code with participants' registry data (as a separate variable that we use administratively to keep track of which registry participants are in which usage protocol. This separate variable can be deleted when this usage protocol is closed. We can re-identify participants.

3. * **When the information/specimens were originally collected, did individuals provide consent for secondary research use of their data/specimens (i.e. consent to another research study or to a research registry)?**
   - (●) **Yes**
   - ( ) No

4. * **Provide name(s) of the registry/repository being accessed.**
   CSTP Overall Screening and Registry

5. * **Site having responsibility for the management of this registry/repository:**
   - (●) **VCU**
   - ( ) Non-VCU

6. **If the registry / repository is located at VCU, provide the IRB number for the registry / repository.**
   HM20002567

7. * **Is the original consent form that participants signed upon entry into the registry /repository available?**
   - (●) **Yes**
   - ( ) No

8. **If YES, the original consent is available, upload it for the IRB to reference**

	Document Name	Document	Version	Date Modified	Uploaded By	Type	Approved
View	Information about blood pressure	BP results P2 flux 8.18.2022.docx	0.01	8/19/2022 2:28 PM	[redacted]	Study reminders/communications	Yes
View	Consent Form	P2 FLUX_consent 3.30.2022 changes accepted revised 5.4.2022.pdf	0.28	5/26/2022 3:57 PM	[redacted]	Consent/Assent/Information Sheet	Yes
View	PPT with Consent	P2FLUX_Consent_Virtual_5.4.22.pptx	0.08	5/4/2022 4:11 PM	[redacted]	Consent/Assent/Information Sheet	Yes
View	Participant Communication - Phone, email, and text scripts	Phone_e-mail_text scripts_3.30.2022 changes accepted revised 5.4.2022.docx	0.22	5/4/2022 3:23 PM	[redacted]	Recruitment/Advertising	Yes

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Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Costs to Participants

1. * **Select all categories of costs that participants or their insurance companies will be responsible for:**
   - [x] **Participants will have no costs associated with this study**
   - [ ] Study related procedures that would be done under standard of care
   - [ ] Study related procedures not associated with standard of care
   - [ ] Administration of drugs / devices
   - [ ] Study drugs or devices
   - [ ] Other

HM20018580 - Alison Breland
Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Compensation

It is recommended that investigators consult with VCU Procurement Services before proposing a compensation plan (monetary or non-monetary) to the IRB to ensure the plan will comply with VCU policies. Refer to WPP XVII-2 for the IRB's guidelines about compensating research participants.

1. * **Describe any compensation that will be provided including:**
   1. **total monetary amount**
   2. **type (e.g., gift card, research pre-paid card, cash, check, merchandise, drawing, extra class credit)**
   3. **how it will be disbursed**
   4. **how you arrived at this amount**
   5. **What identifiers and tax forms will be required for compensation purposes (i.e. W-9 form, SSN, V#, addresses, etc.)**

   Participants will receive $15 for completing the screening. Participants will receive $75 after completing the first session, $100 after completing the second session, $150 after completing the third, and $200 after completing the fourth session. Participants will receive $10 for the follow-up survey. Thus, the total amount participants could earn for the entire study is $550. If a participant chooses to leave the study early, he or she will keep the amount earned up to that point. In addition, if a session must be discontinued for reasons beyond the control of the participant, the participant will be paid for the time spent complying with study conditions before the session began ($15) and also the time spent in the laboratory ($15/hour). All in-person visits (screening and sessions) will be paid in cash. Compensation for the follow-up survey will be paid via emailed or texted Amazon gift card.

   This amount was chosen because of the number of hours that participants are asked to be in the laboratory (12 hours for sessions), which does not include the 12 hours that we ask them to abstain from tobacco products before they come to the lab for each session. In addition, we will insert an in-dwelling catheter for each session. With the time involved in the laboratory, time abstaining before coming to the laboratory (which can be very unpleasant) and possible discomfort from the catheter, we feel that the compensation is appropriate, and not coercive--in order to receive payment, participants have to do quite a bit.

   In addition, there may be rare instances in which the equipment we use malfunctions during a session. If this happens, we may stop the session and ask the participant to return on another day to repeat that session. In these instances, if the equipment malfunctions in the first half of the session, we will pay participants half of the money they would have earned in that session. If the equipment malfunction occurs in the second half of the session, we will pay the participant the full amount for that session.

   Finally, participants who complete the in-person screening visit and who are eligible to participate will be given 5 cards with information about our laboratory and a numerical/alphabetical code that is linked to that participant (name, e-mail address). These cards could be given to friends/family members who might want to participate in any of the lab's studies which include and in-person screening visit. If a friend/family member with a card appears eligible to participate (via the CSTP registry), comes to an in-person screening visit, and brings the card (for any of our studies that include an in-person screening visit) we will send the original participant $20 per card via Amazon gift code to their e-mail address. The original participant will not not be told who brought in the card(s). In total, the maximum a participant could receive from this referral program is $100. Because of the relatively low amount of money participants can earn from this referral program, as well as the low likelihood all 5 cards linked to one participant will be brought back to the laboratory, we do not feel this strategy is coercive.

   Including information about total compensation in the study description is important so that potential participants can determine whether or not the study is worth their time and effort. Note that the specific information about compensation is not on the initial advertisement, but only available if potential participants seek additional information.

2. **If compensation will be pro-rated, explain the payment schedule.**
   N/A

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Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Contingency Plan

This page will be used by the IRB in the event that an institution-wide emergency situation arises that requires contingency plans.

A contingency plan describes the alternative procedures that a study would want to use in case of an emergency that prevented normal study activities from occurring. It is a form of adaptive protocol. It enables the VCU IRB to quickly approve alternative study activities along with criteria for when those activities would or would not be put into effect. For example, in 2020, some studies had a COVID-19 Contingency Protocol approved that described alternative remote procedures that they would switch to whenever the University restricted in-person research activities.

In all studies, investigators are strongly encouraged to plan prospectively and build flexibilities into their regular protocols (regardless of whether an emergency situation exists) as well as think about what they would do in an emergency situation. For example, windows for timed study visits, ranges instead of exact values, flexibilities in inclusion criteria, etc. Flexibility and adaptations that are built into the protocol will reduce the number of changes that have to be submitted to the IRB and should reduce the number of incidents of deviations and noncompliance by investigators.

Further instructions and smartform questions on this page will be released from the IRB in the event of such an institution-wide emergency situation.

ID: HM20018580 **HM20018580** View: SF2 - Research Plan Complete

HM20018580 - Alison Breland
Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Research Complete

Protocol Progress:
- **INITIAL SETUP**
- **BACKGROUND, RATIONALE & GOALS**
- **RESEARCH PLAN**

④ CONSENT PLAN
⑤ RISKS, PRIVACY & CONFIDENTIALITY
⑥ POPULATIONS WITH SPECIAL CONSIDERATIONS
⑦ INSTITUTIONAL REQUIREMENTS
⑧ DOCUMENTS

Click Continue below to go to the next section

ID: HM20018580 **HM20018580** View: SF2 - Consent Process

HM20018580 - Alison Breland
Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Consent Process

1. * List all consent groups:

	Group	Types	Waivers	Roles	Roles - Other	Electronic Signatures	Consent	Coercion	Decision	Re-Consent
View	All participants	Signed Consent by Participant	No Waivers Requested	Research Nurse Research Assistant Trainee/Student(working on project)		Not using electronic signature platforms	Consent for this study will be obtained in the CSTP, at the in-person screening visit. Consent will be ongoing and assumed when a participant makes and completes follow up appointments. Lab staff will call or text the participants the day before their scheduled appointment and remind participants about upcoming appointments, go over study procedures, and check to make sure they are still interested in participating. This will occur before each appointment in which consent is assumed when participants show up for a session.	Removing physical symbols of authority I ke white coats or police badges Other protection(s) not listed here – describe below	Participants will be given as much time as needed to consider the research study and consent form before deciding whether or not to participate.	

2. Upload any consent / assent documents:

	Document Name	Document	Version	Date Modified	Uploaded By	Type	Approved
View	Information about blood pressure	BP results P2 flux 8.18.2022.docx	0.01	8/19/2022 2:28 PM	[redacted]	Study reminders/communications	Yes
View	Consent Form	P2 FLUX_consent 3.30.2022 changes accepted revised 5.4.2022.pdf	0.28	5/26/2022 3:57 PM	[redacted]	Consent/Assent/Information Sheet	Yes

ID: HM20018580 **HM20018580** View: SF2 - Consent Plan Complete

HM20018580 - Alison Breland
Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Consent Plan Complete

Protocol Progress:
- **INITIAL SETUP**
- **BACKGROUND, RATIONALE & GOALS**
- **RESEARCH PLAN**
- **CONSENT PLAN**

⑤ RISKS, PRIVACY & CONFIDENTIALITY
⑥ POPULATIONS WITH SPECIAL CONSIDERATIONS
⑦ INSTITUTIONAL REQUIREMENTS
⑧ DOCUMENTS

Click Continue below to go to the next section

ID: HM20018580 **HM20018580**

View: SF2 - Risks, Discomforts, Potential Harms and Monitoring

HM20018580 - Alison Breland
Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Risks, Discomforts, Potential Harms and Monitoring

1. * **Describe the risks of each research procedure to participants or others. For each identified risk, provide an assessment of the anticipated seriousness and likelihood of the risk. Some examples of possible risks include but are not limited to:**

   - **Physical risks (e.g. bodily harms or discomforts, side effects, etc.)**
   - **Psychological risks (e.g. emotional, mental, or spiritual harms or discomforts, changes to thoughts, beliefs, or behaviors, etc.)**
   - **Research data risks (e.g. loss of confidentiality and privacy)**
   - **Social or legal risks (e.g. impacts on relationships or reputation, legal or criminal justice actions for self or others, etc.)**
   - **Financial risks (e.g. impacts on income, employability, or insurability, loss of services, etc.)**
   - **Other risks (e.g. unforeseeable risks of experimental procedures, risks related to particular study designs (randomization, washout, placebo, withholding care/services, deception), etc.)**

   See the help text for additional guidance.

   This protocol uses established methods and procedures and involves only minimal risk to participants. Twelve hours of tobacco/nicotine abstinence may cause mild discomfort and nicotine abstinence symptoms. Nicotine abstinence symptoms are not medically dangerous but participants may experience include; irritability, anxiety and restlessness, excessive hunger, difficulty concentrating, and sleep disturbance. The risks of using ECIGs/nicotine are routine for the target population. Risks of nicotine use include sweating, lightheadedness, dizziness, nausea, and nervousness. These effects are unlikely in individuals who use tobacco products regularly. In addition, some people who use e-cigarettes have experienced seizures (https://www.fda.gov/tobacco-products/ctp-newsroom/some-e-cigarette-users-are-having-seizures-most-reports-involving-youth-and-young-adults). These have been reported among individuals with a history of seizures as well as among individuals using other substances such as marijuana and amphetamines, as well as among others. In addition, recently there have been some cases of e-cigarette use being associated with respiratory illnesses such as difficulties breathing, cough, shortness of breath and/or chest pain before hospitalization. In some cases, e-cigarette use has led to death, although most of these cases have been related to vaping THC. In some cases symptoms of mild to moderate gastrointestinal illness such as nausea, abdominal pain, vomiting, diarrhea, or fevers or fatigue have been reported. The Centers for Disease Control and Prevention advises that e-cigarette, or vaping products are unsafe for youths, young adults, or women who are pregnant. Please note that we recruit cigarette smokers who are aged 18 or older but consider recruitment of individuals 18 -25 as minimal risk, as the definition of "minimal risk" includes: "…the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests." Our inclusion criteria make clear that participants in this study are exposed to nicotine in their daily life, thus the risk of this exposure are, by definition, minimal. Adults who do not currently use tobacco products should not start using e-cigarette, or vaping, products.

   Blood sampling involves the minor risk of infection and bruising at the catheter site.

   We have read that users of the ECIG device we are using in this study sometimes experience small drops of liquid during inhalation, and we have occasionally noticed this during our testing of the product. If this occurs, participants may find the droplets unexpected and/or unpleasant. We believe that is unlikely that these small droplets of liquid present any medical danger. Currently, there is no known or confirmed risk to the droplets that we are aware of.

   It is unlikely that the questionnaires will pose any potential risk or discomfort (no sensitive questions are being asked). Sessions are relatively short, and we find that participants tolerate 4-hour sessions well (i.e., they do not become fatigued).

   There is a small risk of loss of confidentiality, discomfort with monitoring procedures, and increased heart rate/blood pressure.

   There is little available data on power settings (in Watts) and liquid concentrations that ECIG users use. One paper described data on power and liquid settings for 165 adult users in California, which showed a median power setting of 204.5 W, although the authors note that many participants were not able to accurately report their power settings. In the same study, the median liquid concentration was 6.0 mg/ml nicotine with a range of 0 - 30.0 mg/ml. Data collected in an ongoing study in the CSTP for N = 44 shows an average power setting of 55.3 W (range = 6.8 - 204 W) and a mean liquid concentration of 7.6 mg/ml nicotine (range = 3 - 18 mg/ml). We have conducted a variety of ECIG studies previously in the CSTP with liquid that is 36 mg/ml nicotine. Finally, information from e-cigarette forums indicates that individuals are using both low and high nicotine liquids (35 - 50 mg/ml, for example) in "third generation", variable-

wattage devices like the one we are proposing to use in this study. We are not aware of specific risks associated with different liquid/power settings other than what ECIG users are exposed to with use in general.

2. * **Describe how each of the risks/harms/discomforts identified above will be minimized:**
Participant safety and rights will be protected by highly trained staff that is well-versed in the importance of maintaining confidentiality. Participants will be informed of the potential symptoms of nicotine abstinence/withdrawal , and will be told that they are free to leave the study at any time. Risk of infection from blood sampling is minimized by trained nursing staff, disposable equipment, and aseptic nursing procedures. In the 15 plus years of operation. the CSTP has completed numerous IRB-approved studies without participant injury or a breach of confidentiality.

   In addition, non-invasive computerized monitoring equipment allows for minute-by-minute, real time monitoring of participants' heart rate. If needed, we can monitor blood pressure as well throughout the session. Research personnel are trained to alert the research nurse if heart rate continually exceeds 120 beats per minute, if systolic BP continually exceeds 160 mm Hg, or if diastolic BP continually exceeds 100 mm Hg. Individuals whose heart rate and/or BP levels remain elevated will be monitored by the nurse, and if necessary emergency responders will be notified. Emergency medical coverage is available via the emergency room that is approximately 1.5 miles from the CSTP.

   In the case of nicotine abstinence symptoms, the project products will possibly alleviate these risks. Participants will be provided with water at all times.

   The risk of seizures is minimized by excluding participants with any history of seizures, and by having a full-time RN available, as well as monitoring of vital signs. In addition, some of the reported seizures occurred in users who were using other substances such as marijuana or amphetamines--the risk of seizures in this study is reduced as we are administering nicotine and no other substances.

   The risk of respiratory illnesses related to ECIG use is minimized by the limited ECIG use that occurs in each session (10 puffs plus a 30 minute ad l b use period). Participants are informed about recent reports of ECIG-related respiratory illnesses, and that most of the cases have been related to vaping THC. Participants are also informed that the Centers for Disease Control and Prevention advises that e-cigarette, or vaping products are unsafe for use by youths, young adults, or women who are pregnant and that adults who do not currently use tobacco products should not start using e-cigarette, or vaping, products. Participants are also advised to monitor themselves for symptoms and to seek medical attention if they have concerns. In addition, we will ask about respiratory and gastrointestinal symptoms at screening and before each session begins. Answers given at the beginning of each session will be compared to the participants' previous answers, and if any symptoms have increased, Dr. Lipato will be asked to review the symptoms. In some cases, we may contact Dr. Lipato to determine if a session can proceed.

   We recruit individuals aged 18 + who use nicotine-containing products at similar or higher daily/weekly frequencies that they would be exposed in the laboratory setting. For example, our cigarette smokers must report smoking at least 8 cigarettes per day, have a CO level at screening of at least 7 ppm (indicates recent smoked tobacco use) and a positive cotinine cassette test to verify nicotine use. Thus, our protocol ensures that any study-related nicotine/tobacco exposure is not greater than that to which participants expose themselves as part of their ordinary life.

   During the sessions, if the participant experiences small droplets of liquid during inhalation, we will immediately replace the device they are using in the session.

   Participants will be able to view all questionnaires used in sessions before attending sessions, and will be informed of the length of each session. If participants do not want to answer the questionnaires, or feel that the length of the sessions will be too long, they can choose to not participate.

   Finally, as a precaution, we have added to the consent form that the e-cigarette liquids we give to participants may contain more nicotine than they are used to, although some e-cigarette users report using these concentrations. Participants are instructed to inform research staff if they experience any discomfort.

3. * **Describe any potential risks or harms to a community or a specific population based on study findings (e.g. information that could be stigmatizing or derogatory):**
None

4. **Where appropriate, discuss provisions for ensuring necessary medical, professional, or psychological intervention in the event of adverse events to the subjects:**
Individuals whose heart rate and/or BP levels remain elevated will be monitored continually by the nurse and, if necessary, emergency responders will be notified. Emergency medical services are available via the emergency room that is 1.5 miles from the CSTP.

5. * **Describe criteria for when the investigator would withdraw an individual participant from the study; such as safety or toxicity concerns, emotional distress, inability to comply with the protocol, etc.:**
Participants may be withdrawn from the study if the PI or study nurse has any safety concerns (such as high blood pressure or heart rate) during sessions, or if an intravenous catheter cannot be successfully inserted (after multiple attempts over several sessions and/or if the participant does not want to continue trying). We do not have specific criteria for withdrawing a participant for unsuccessful IV catheter insertion, because it depends on the reasons for unsuccessful catheter insertion. For example, if a participant dehydrated, catheter insertion may be unsuccessful on a given day, but catheter insertion may be successful on another day, if the participant is more hydrated. Alternatively, if IV catheter insertion is unsuccessful because a participant's veins "roll" or are too deep for the study nurse to access, a participant may be withdrawn from the study. We also take into account participant preferences, i.e., if there is difficulty with IV catheter insertion and a participant does not want the study nurse to continue trying, we withdraw that participant.

   If a participant does not comply with the 12-hour tobacco/nicotine abstinence requirement (which can be difficult for

some participants), we allow participants to re-schedule a session. We allow multiple attempts, but do not have a specified number of attempts that are allowed, as it depends on the circumstances of each participant

6. * **Summarize any pre-specified criteria that would trigger the investigator/sponsor/monitoring committee to stop or change the study protocol due to safety concerns:**
At this time we do not have any pre-specified criteria for stopping or changing the study protocol due to safety concerns.

Data and Safety Monitoring
Data and safety monitoring is a system for checking the study's data at regular intervals over the study period to identify and address issues that could affect the safety of research participants. This requirement is in accordance with 45 CFR 46.111.

The purpose of data and safety monitoring plan is to set forth study team procedures for monitoring/addressing:
- Participant safety (physical, psychological, etc.)
- Data validity
- Early stopping (termination) based upon changes in risks and benefits.

7. * **Indicate if this study will have a Data Safety Monitoring Board (DSMB) or a Data Safety Monitoring Plan (DSMP): [Required for all greater than minimal risk studies]**

- [ ] DSMB
- [x] **DSMP**
- [ ] No DSMB/DSMP [Note: This response is not applicable for greater than minimal risk studies]

8. * **Describe your Data Safety Monitoring Plan for monitoring the study's data to ensure the safety of participants. This plan should include (but is not limited to) the following elements:**
1. Who will monitor data
2. What data and/or processes will be reviewed
3. When and how frequently monitoring will occur
4. What report/documentation will be submitted to the IRB at the time of continuing reviews

See the help text for additional guidance.

Please see attached DSMP.

HM20018580 - Alison Breland
Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Privacy

Privacy refers to an individual's right to control how others view, record, or obtain information about them. When privacy is violated it can involve such things as

- Being asked personal questions in a public setting;
- Being publicly identified as having a particular characteristic or diagnosis;
- Being seen entering a place that might be stigmatizing;
- Being photographed, videotaped or observed without consent;
- Disclosure of personal information to unauthorized people

Privacy is not the same as confidentiality because privacy protections apply to people, and confidentiality protections apply to data. Confidentiality protections should be described on the Data Confidentiality page of this form, not here.

Instructions for this page:

Select all the applicable ways that the research team will protect participants' privacy throughout the course of the study. The options listed include some of the most common best practices. Not all will be applicable to every study.

****The IRB will expect studies to operationalize all selected checkboxes into the conduct of the research.**

To elaborate on any response, also click the "Other Protections" checkbox to provide further explanation in the last free-text question.

Read the entire page before filling out the form.

1. * **Protections when conducting one-on-one in-person interventions or interactions (for groups see Q2 below):**
   - [x] **Conducting study activities in locations that maximize privacy (limited people around, closing doors, drawing drapes around beds, monitoring voice volume, etc.)**
   - [ ] Verifying identity before discussing personal information.
   - [ ] Asking the participant if they are comfortable answering questions in that location
   - [ ] Asking the participant if they are comfortable with having other people present (if any)
   - [ ] Moving away from other people when conducting activities in public spaces or offering a private space
   - [ ] Offering other options of ways to respond to sensitive questions (i.e. pointing, clicking, or writing) if uncomfortable verbally responding
   - [ ] Using generic signs on research rooms and spaces, particularly for research on stigmatizing or sensitive topics
   - [ ] Other protections not listed in this question – describe below
   - [ ] N/A – study has no in-person interventions or interactions with participants

2. * **Protections when conducting group interventions or interactions:**
   - [x] **Conducting study activities in locations that maximize privacy (limited people passing by, closing doors, monitoring voice volume, etc.)**
   - [ ] Moving to a more private area to answer questions or to discuss concerns
   - [ ] Discussing privacy with the participants and the importance of not talking outside the group about what other people say during the group session
   - [ ] Allowing participants to use a pseudonym or limiting use of individuals' names during the group activity
   - [ ] Asking everyone in a public group setting (e.g. classrooms, workshops) to turn something in (blank or filled) so participants do not have to self-identify when turning in materials
   - [ ] Collecting paper forms in a closed box or envelope rather than passing to others or leaving in an open area
   - [x] **Limiting participant identifiers that would be visible on paper documents (i.e. using study IDs instead of direct identifiers)**
   - [ ] Allowing people to distance themselves from other participants during group activities

- [ ] Offering other options of ways to respond to sensitive questions (i.e. pointing, clicking, or writing instead of speaking)
- [ ] Using generic signs on research rooms and spaces, particularly for research on stigmatizing or sensitive topics
- [ ] Ensuring non-participating individuals are not captured on recordings or in photos
- [ ] Other protections not listed in this question – describe below
- [ ] N/A – study has no group interventions or interactions

3. * Protections when conducting remote interventions or interactions (e.g. phone, text, email, video-conference, tele-health, online, etc.):

- [x] **Conducting study activities in locations where study staff can maximize their own privacy (limited people around, closing doors, monitoring voice volume, etc.)**
- [ ] Leaving/sending generic messages that avoid using study and participant identifiers, such as names, study titles, clinics, study topics, etc.
- [x] **Obtaining permission prior to sending text messages**
- [ ] Advising the participant to move to a location where they are comfortable answering questions and will not be overheard - incorporate this instruction into your study materials
- [ ] Advising online participants to complete the activity at a time and location where they will be comfortable answering questions - incorporate this instruction into your study materials
- [ ] Ensuring non-participating individuals are not captured on recordings or in photos
- [ ] Offering other options of ways to complete the activity (i.e. online, paper, phone) if more privacy is desired
- [ ] Offering a way to save and return later to the online activity if privacy is compromised
- [ ] Other protections not listed in this question – describe below
- [ ] N/A – study has no remote interventions or interactions with participants

4. * Protections when mailing study materials to/from participants:

- [ ] Obtaining permission to mail study materials
- [ ] Confirming/verifying the accuracy of addresses before mailing items
- [ ] Ensuring the participant is able to personally receive mailed materials and has a way to protect their own privacy if they do not want others to know they are receiving research communications (i.e. notifying participants of when to expect it)
- [ ] Using return address labels and document headers that avoid study identifiers, such as study names, clinics, study topics, etc.
- [ ] Avoiding or limiting use of participant identifiers and health information on mailed documents (i.e. using study IDs instead of direct identifiers)
- [ ] Providing a return mailing address label or pre-addressed envelope to ensure returned items are sent to the correct address
- [ ] Communicating receipt of mail from participants and/or asking them to notify you when they mail it to ensure study documents are not lost in transfer
- [ ] Offering other options of ways to complete the activity (i.e. by phone or online) if desired
- [ ] Other protections not listed in this question – describe below
- [x] **N/A – not mailing any materials to/from participants**

5. * Protections when analyzing or disseminating study data *Applicable to all studies*:

- [x] **Working only in locations where the study team can ensure privacy (not working in close proximity to non-study personnel, closing doors, closing/putting away documents/files before leaving, etc.)**
- [x] **Securing physical materials only in locations that ensure privacy (access limited to authorized study personnel)**
- [x] **Only sharing data/specimens in accordance with the Sharing Plan outlined in this smartform**
- [ ] Obtaining explicit parental permission before disseminating or sharing recordings or photos of children
- [ ] Blurring/redacting/hiding faces and other identifiable features/marks (tattoos, scars, birthmarks, distinctive voice, etc.) in recordings or photos prior to disseminating or sharing
- [ ] Only publishing or presenting aggregate results or findings (i.e. no individual-level information)

- ☐ Taking additional steps to protect participant identities when publishing or presenting individual-level information, quotations, results, images – descr be below
- ☐ Other protections not listed in this question – describe below

6. Describe any other way(s) that the research team will protect participants' privacy. *See the help text for additional guidance*.

Participants' privacy and comfort will be addressed throughout the course of the study. During the intake process and session, participants will be seated in a private room. All study procedures will take place behind closed doors. We will use Zoom (like an intercom) to communicate with participants from outside of the session room, but will not use a camera for the computers in the session rooms, nor will the participants' name be entered into Zoom. We will also use a password-protected Zoom session. Participants will be informed that they may withdraw from the research study should they find any research procedures unacceptable. All participants and data will be treated with professional standard of confidentiality. Data are identified by numeric code only and stored under double lock or in REDCap. Participants' names are not directly linked to data, with the exception of the contact information we request to send the follow-up survey. Briefly, a numeric code is assigned to each participant when they provide informed consent, and the part of the numeric code relates to the order in which the individual consented. This numeric code appears on all data. Access to the key and the consent documents is restricted to study investigators and staff: these individuals perform the informed consent and conduct the study with the participants so they already know who the participants are and observe the participants as data are collected. Participants' research related information will be withheld, consistent with the law, unless permission is given to release such information. Effectiveness is indexed by previous experience: we have used these procedures for over 15 years and have not had a single incident in which a participants' confidential information has been compromised.

In addition, the way in which the referral program will be administered (with participants who complete this study being given cards with alphanumeric codes linked to their names/e-mail addresses) reduces the risk of a loss of privacy, as the original participant will not be told who brought in the card(s).

HM20018580 - Alison Breland
Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Data Confidentiality and Storage

Confidentiality refers to the way private, identifiable information about a participant or defined community is maintained and shared. It describes how the study's research materials (data, specimens, records, etc.) are protected from unauthorized access.

Instructions for this page:
Select all the ways that the research team will keep the study materials and data confidential throughout the course of the study. Not all will be applicable to every study.
To elaborate on any response, also click the "Other Protections" checkbox to provide further explanation in the last free-text question.

Read the entire page before filling out the form.

1. * **Protections for paper research materials:**
   - [x] **Maintaining control of paper documents at all times, including when at an off-campus location**
   - [x] **Limiting or avoiding use of participant identifiers on paper documents (i.e. using study IDs instead of direct identifiers)**
   - [x] **Storing paper documents in a secure location accessible only to authorized study personnel**
   - [ ] Promptly transcr bing, scanning, or abstracting data from paper into electronic platforms with destruction of the paper copy
   - [x] **Proper destruction of paper records (and obtaining prior permission when required) in accordance with VCU Records Management policies**
   - [ ] Other protection not listed in this question – describe below
   - [ ] N/A – no paper research materials

2. * **Protections for research specimens:**
   - [x] **Maintaining control of specimens at all times, including when at an off-campus location**
   - [x] **Storing specimens in a secure location accessible only to authorized study personnel**
   - [x] **Labeling specimens with subject ID or other coded information instead of direct identifiers**
   - [x] **Final destruction of specimens will be in accordance with VCU policies and specimen containers will be devoid of any identifiable information**
   - [ ] Other protection not listed in this question – describe below
   - [ ] N/A – no research specimens

3. * **Protections for electronic files/data - See https://ts.vcu.edu/about-us/information-security/data-management-system/**
   - [x] ***Required for all studies* Use VCU-approved methods of data storage, transmission, and transfer (see https://dms.vcu.edu)**
   - [x] **Remotely accessing VCU network storage to store data when at off-campus locations**
   - [x] **Ensuring unauthorized individuals who might share a device do not have access to study materials (e.g. individual logins, separate accounts)**
   - [x] **Using VCU-approved data collection tools and apps (e.g. REDCap) and storing exported analysis files in VCU-approved storage locations (see https://dms.vcu.edu)**
   - [ ] When using non-VCU-approved electronic data collection tools, storage locations, data transfer platforms, and mobile apps (e.g. Dropbox, Box, Survey Monkey, Fitbits, novel apps, multi-site data collection platforms):
     • consulting with VCU Information Security on proper data management (see https://ts.vcu.edu/askit/essential-computing/information-security/);
     • advising participants about the terms of use and privacy policies of those sites/apps;
     • limiting or avoiding use of identifiers; and
     • removing data promptly from the external location after transferring it to a VCU storage location
   - [x] **De-identifying the research data by replacing subjects' names with assigned subject IDs**
   - [x] **Storing the study's linkage key in a password-protected and VCU-approved storage location (see https://dms.vcu.edu)**
   - [ ] When analyzing particularly sensitive information, using computers that are unconnected from the internet.

- [ ] Proper destruction of electronic records (and obtaining prior permission when required) in accordance with VCU Records Management policies
- [ ] Other protection not listed in this question – describe below

4. * **Protections for computers and research devices/apps that are provided to participants for use in the study and taken out of the lab (i.e., giving participants a phone or iPad to take home, wearable trackers, apps, etc.):**
   - [ ] Transferring data promptly from the device/app given to the participant to a VCU storage location
   - [ ] Setting strong passwords on computers and research devices (when applicable) that leave VCU with participants
   - [ ] Device/app set up by VCU Information Security
   - [ ] When providing devices or mobile apps to children, informing parents about the settings and how to manage them (if applicable), internet access, and any other installed apps on the device
   - [ ] Other protection not listed in this question – describe the device/app and protection below
   - [x] **N/A – no computers or devices/apps being provided for participant use outside the lab**

5. * **Protections for email/online communications**
   - [x] **Only using VCU/VCU Health email addresses for study-related communications**
   - [ ] Only using VCU/VCU Health–approved methods of teleconferencing or video conferencing (e.g. Zoom) (for studies involving HIPAA, contact VCU or VCU Health Information Security [as appropriate] about HIPAA-compliant systems)
   - [x] **Other protection not listed in this question – describe below**
   - [ ] N/A – no email/online communications

6. **Specify any other places where this study's paper and electronic research data and/or physical specimens will be stored and any other ways they will be secured from improper use and disclosure.**

   See the help text for additional guidance.
   Paper based records will be kept in study three ring binders that are stored in large upright locked cabinets in a locked room and only accessed by authorized study personnel.

   All computers and storage devices will be kept in locked cabinets and/or within locked laboratory rooms. Electronic records will be made available only to those personnel in the study through the use of access controls (passwords). Identifiers will be removed from study-related data (with the exception of contact information that we ask for as part of the follow-up survey) and data will be coded with a key stored in a separate, secure location. Electronic data (with study IDs only) is stored in REDCap and/or in excel spreadsheets that are saved either on hard drives and/or a VCU server. Data from the online registry, as well as the in-person screen and from sessions and follow-up survey will be stored in and can only be accessed through the password secured system REDCap. Only approved CSTP staff, faculty, and students will have keys and/or electronic access to this information.

   Plasma samples are labeled with participant code numbers and stored in a -80 freezer in a locked laboratory space. The samples are stored separately from identifying information (consent forms).

   CSTP has a data security management plan on file with technology services.

   Participants may be contacted through REDCap's Twilio feature. This feature allows for text messages to be sent to participants within REDCap's encrypted system.

7. * **If research data/specimens will be sent/released to person(s) or group(s) outside of the VCU study team or the PI's department for the conduct of this protocol (not for future sharing),**
   1) identify the data/specimen recipient(s) along with their VCU department or other institutional or organizational affiliation(s).
   2) give a description of what identifiers and/or codes will accompany the data/specimens.
   If data/specimens are not being sent/released outside of the VCU study team or the PI's department, state that:
   Data with identifiers will not be released to any person or group outside of the study team.

8. * **Select all identifiers that will be collected at any time as part of this study (including for recruitment, data gathering, data analysis, etc.), even if the data will eventually be anonymized:**
   - [x] **Names**
   - [x] **Geographic Locators Below State Level**
   - [x] **Social Security Numbers**
   - [ ] Dates (year alone is not an identifier)
   - [ ] Ages over 89 (age under 89 is not an identifier)
   - [x] **Phone Numbers**

- [ ] Facsimile Numbers
- [x] **E-mail Addresses**
- [ ] Medical Record Numbers
- [ ] Device Identifiers
- [ ] Biometric Identifiers
- [ ] Web URLs
- [ ] IP Addresses
- [ ] Account Numbers
- [ ] Health Plan Numbers
- [ ] Full Face Photos or Comparable Images
- [ ] License/Certification Numbers
- [ ] Vehicle ID Numbers
- [ ] Other Unique Identifier
- [ ] No Identifiers
- [ ] Employee V#

9. * **If the study will code (i.e. de-identify) the research data by replacing subjects' names and/or other identifiers with assigned subject IDs, explain the following aspects of the coding process:**

- The process for how subject IDs will be generated/assigned (e.g. random, sequential)
- Whether there will be a key that links the subject ID with direct identifiers. If there will be no linkage key, state that.

If a key will be created, describe
- The place where the key will be stored
- The role(s) of all individuals who will have access to the key
- When the key will be destroyed

See the help text for guidance.
Data are identified by numeric code only. Participants' names are not directly linked to data. Briefly, a numeric code is assigned to each participant when they provide informed consent, and the numeric part of the code relates to the order in which the individual consented. This participant numeric code appears on all subsequent documents/data forms. A key is maintained in the study binder so that we can demonstrate that a particular data set is associated with a particular consent document. The key and consent documents are stored separately from each other and separately from all data (under double lock or in RedCap). Access to the key and the consent documents is restricted to study investigators, staff, and students: these individuals perform the informed consent and conduct the study with the participants so they already know who the participants are and observe the participants as data are collected. Data keys will be destroyed at the end of the study once the minimum time required for data retention has been met per VCU Data Retention Policy and/or sponsor retention requirements. De-identified data may be stored indefinitely.

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Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Data Retention

1. * **Select all of the ways that individually identifiable information obtained during pre-screening and/or screening will be handled for individuals who DO NOT qualify for the study:**
   - [ ] N/A - study does not require screening procedures
   - [ ] Immediately destroy the information and identifiers (no data collected)
   - [ ] Immediately destroy the identifiers connected with the data (anonymization)
   - [ ] Store until the end of study & then destroy
   - [x] **Use as "screening failure" data by members of the study team**
   - [ ] Provide to others outside of the research team (with the participant's permission)
   - [ ] Request permission from participant to maintain and use the identifiable information
   - [ ] Other

2. * **Will participants be able to withdraw their data (paper, electronic, or specimens) from the study (e.g. ask that it be destroyed or returned) if they no longer wish to participate? (FDA-regulated studies should select No – see help text)**
   - (●) **Yes**
   - ( ) No

3. * **If Yes , describe the process (oral, written, email, letter, etc.) that participants should use to request withdrawal of their data/specimens. Identify if there is a timepoint when withdrawal will no longer be an option and/or if the amount of data that can be withdrawn is reduced at different points in the study.**
   If any participant wants to withdraw their data, they can contact the PI, who will work with staff to remove all of the participant's data. Participants will be able to do this at their convenience via phone, email, or in-person.

4. * **What will happen to the research materials (e.g. data, specimens, documents, etc.) when the research has been completed?**
   - (●) **Stored indefinitely with identifiers removed**
   - ( ) Stored indefinitely with identifiers attached
   - ( ) Destroyed at the end of study once the minimum time required for data retention has been met per VCU Data Retention Policy and/or sponsor retention requirements
   - ( ) Destroyed when notified by sponsor but not less than the minimum time required for data retention per VCU Data Retention Policy
   - ( ) Other

5. * **Will audio/video recordings and full face photographs be destroyed?**
   - ( ) Yes
   - (●) **No**

6. **If yes, describe at what point and how recordings will be destroyed:**

7. **If no, explain why the recordings need to be maintained:**
   There will be no recordings.

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Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Sharing Plan

This page addresses times when investigators may be required to share information about participants or may desire to share their research information/specimens with the aim of advancing science. This page creates a plan for when and how information/specimens could be shared.

Try to anticipate all reasonably foreseeable sharing so that the consent document can also reflect that information. However, it is acceptable to amend this page later and explain either how re-consent of previously and currently enrolled participants will occur or why re-consent should not be required.

The IRB reviews this page against the consent document (if one exists) to demonstrate the ethical principle of Respect for Persons by confirming that plans for sharing do not go against what participants would understand about the use of their data/specimens.

The IRB also ensures there are adequate protections for the privacy of participants and the confidentiality of participants' data/specimens when data is shared with others.

1. * **Is it likely investigators could discover information about child/elder abuse or neglect that would require mandatory reporting by the investigators or staff?**

   The Code of Virginia requires that most medical personnel and all employees of institutions of higher education report suspected child/elder abuse or neglect.

   ○ Yes

   ● **No**

2. * **Is it likely investigators could discover a previously unknown reportable disease or condition that would require mandatory reporting by the investigators or staff (i.e., HIV , coronavirus, hepatitis, etc.)?**

   ○ Yes ● **No**

3. * **Will the sponsor or investigator obtain a Certificate of Confidentiality for this study?**

   Certificates of Confidentiality (CoC) are issued by the National Institutes of Health (NIH), the FDA and CDC to protect identifiable research information from forced disclosure. All human subject research studies regardless of funding can qualify to receive a CoC. A CoC is automatically issued for research that was ongoing on December 13, 2016. or initiated after that date. For more information, see https://humansubjects.nih.gov/coc/

   ○ No – Will not obtain CoC for this study

   ● **Yes – CoC has been obtained or issued automatically**

   ○ Yes – CoC request is pending

4. * **Select the way(s) that information or biospecimens (including DNA) may be used <u>by the VCU PI or VCU study team for other future research projects</u> (i.e. analyses beyond/apart from the aims of this study)?**
   See help text for definitions.

   ☐ Will use directly identifiable information or specimens.

   ('Directly identifiable' means that identifiers like name, medical record number, social security number, etc. are included in/attached to the dataset/specimens. Maintaining identifiable data for future research is treated as a registry by the VCU IRB. The IRB must approve the new research use in an amendment to this study or as part of a new study before the project is initiated. VCU IRB studies will be asked more questions about this on a later page)

   ☐ Will use de-identified or indirectly identifiable information or specimens.

   ('De-identified' means that a linkage/key code exists that links identifiers to data/specimens. When the researcher holds both the data and the key, the VCU IRB considers the subjects to be readily identifiable. Maintaining identifiable data for future research uses is treated by the IRB as a registry. The IRB must approve

the new research use in an amendment to this study or as part of a new study before the project is initiated. VCU IRB studies will be asked more questions about this on a later page)

Will use anonymized information or specimens.

☑ *('Anonymized' means that 1) no linkage/key codes exist that link identifiers to data/specimens; and 2) subjects cannot be readily identified, i.e. no direct or indirect identifiers or identifiable combinations of variables. The VCU IRB considers uses of anonymized data/specimens to not be human subject research.)*

Will use aggregate results (summary-level results), not individual-level information or specimens.

☐ *(The VCU IRB considers uses of aggregate data to not be human subject research because there are no individual subjects.)*

Will contr bute to an existing registry or repository

☐ *(VCU IRB studies will be asked more questions about this on a later page.)*

☐ Will not use information/specimens for purposes beyond this study.

☐ Not sure and will submit an amendment when known

☐ Other use(s) of individual-level information in a way not listed above

5. * **Select the way(s) the VCU PI/study team may share information or biospecimens (including DNA) with other researchers who are not on this study team (i.e. for analyses beyond/apart from the aims of this study).** ***See help text for definitions.***

Will share directly identifiable information or specimens with other researchers.

☐ *('Directly identifiable' means that identifiers like name, medical record number, social security number, etc. are included in/attached to the dataset/specimens. Maintaining identifiable data for future research uses is treated by the VCU IRB as a registry. The data recipient's use of identifiable data would require them to obtain IRB review. VCU IRB studies will be asked more questions about this on a later page.)*

Will share de-identified or indirectly identifiable information or specimens with other researchers.

☐ *('De-identified' means that a linkage/key code exists that links identifiers to data/specimens. The VCU researcher maintains the key but does not share it with any other researchers. The recipient's use of de-identified data/specimens may not be human subject research if there is documentation that the key will never be shared with the recipient, but they should check with their own IRB about review requirements. VCU IRB studies will be asked more questions about this on a later page.)*

Will share anonymized information or specimens with other researchers.

☑ *('Anonymized' means that 1) no linkage/key codes exist that link identifiers to data/specimens; and 2) subjects cannot be readily identified (i.e. no direct or indirect identifiers or identifiable combinations of variables). The VCU IRB considers uses of anonymized data/specimens by other researchers to not be human subject research, but the recipient should check with their own IRB about review requirements.)*

Will only share aggregate results (summary-level results), not individual-level information or specimens.

☐ *(The VCU IRB considers uses of aggregate data to not be human subject research because there are no individual subjects. The data recipient should check with their own IRB about review requirements.)*

☐ Will contr bute to an existing registry or repository (VCU IRB studies will be asked more questions about this on a later page.)

☐ Will submit data to an NIH genomic data repository (VCU IRB studies will be asked more questions about this on a later page.)

☐ Will not share information/specimens with other researchers.

☐ Not sure and will submit an amendment when known

- [ ] Other sharing of individual-level information with other researchers

6. * **Since you responded in a question above that you may use or share anonymous, individual level data, indicate why the proposed use or sharing of anonymous data/specimens is not inconsistent with what participants would have reasonably understood from the consent document about the uses of their information. (Select all that apply.)**

- [x] **The consent form states that after identifiers are removed, information or specimens could be used for future research studies without additional informed consent from the subject (this is a new element of consent included in consent templates as of May 2018)**
- [ ] The consent form or exempt information sheet is silent about whether/how information or specimens could be used for future research studies.
- [ ] The information or specimens were/will be obtained under a waiver of informed consent, waiver of HIPAA authorization, or an exempt study that did not use an information sheet.
- [ ] Other reason why anonymous use/sharing is not inconsistent with the consent document

7. * **The Principal Investigator certifies that prior to releasing an anonymized dataset or anonymized specimens the following conditions will all be met:**

- all 18 HIPAA identifiers (including all dates) will be removed;
- all indirectly identifiable data elements (unusual, rare, uncommon data) will be removed, grouped, suppressed, or otherwise transformed to no longer be readily identifiable;
- a different subject ID will be assigned than the one used for the main study and a linkage key will not be kept; and
- the PI will review the dataset/specimens to confirm that the remaining information could not be used alone or in combination with any other information to re-identify the participants represented in the data.

See help text for more information.

- (●) **Yes**
- ( ) No

8. * **The Principal Investigator certifies that after the study has been closed with the VCU IRB, the following conditions will be met whenever individual level research information and/or specimens are used or shared:**

- The identities of participants who are represented in the dataset/specimens will not be readily ascertainable or otherwise re-identifiable by the recipient;
- If a linkage/code key is created, it will be maintained at VCU and not shared with the recipient under any circumstances;
- The PI will have no knowledge that the remaining information could be used alone or in combination with any other information to identify the individuals represented in the data; and
- The PI agrees to abide by this sharing plan even after the study has been closed with the VCU IRB.

- (●) **Yes**
- ( ) No
- ( ) N/A - No sharing will occur

9. **If the Certificate of Confidentiality has been obtained by the PI, upload it here:**

	Document Name	Document	Version	Date Modified	Uploaded By	Type	Approved
View	Information about blood pressure	BP results P2 flux 8.18.2022.docx	0.01	8/19/2022 2:28 PM	[redacted]	Study reminders/communications	Yes
View	Consent Form	P2 FLUX_consent 3.30.2022 changes accepted revised 5.4.2022.pdf	0.28	5/26/2022 3:57 PM	[redacted]	Consent/Assent/Information Sheet	Yes
View	PPT with Consent	P2FLUX_Consent_Virtual_5.4.22.pptx	0.08	5/4/2022 4:11 PM	[redacted]	Consent/Assent/Information Sheet	Yes
View	Participant Communication - Phone, email, and text scripts	Phone_e-mail_text scripts_3.30.2022 changes accepted revised 5.4.2022.docx	0.22	5/4/2022 3:23 PM	[redacted]	Recruitment/Advertising	Yes

ID: HM20018580 **HM20018580**

View: SF2 - Pertinent Results and Incidental Findings

HM20018580 - Alison Breland
Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Pertinent Results and Incidental Findings

1. * **Is it likely investigators could discover a participant's previously unknown condition (e.g. pregnancy, disease, suicidal thoughts, wrong paternity, genetic results, or other findings that may be of importance to health or well-being) or if a participant is engaging in illegal or reportable activities:**
   - (●) **Yes**
   - ( ) No

2. * **Describe what possible pertinent results or incidental findings stemming from research-only procedures may be discovered.**
   During screening, we assess blood pressure.

   During screening, we assess if female participants are pregnant.

   During screening, we ask questions about mar juana/cannabis use and other illicit drug use.

   During screening and at the beginning of a session, we ask about respiratory and gastrointestinal symptoms.

3. * **Explain what actions or procedures research personnel should take to inform the PI of such a discovery :**
   If a participant's blood pressure is high, research staff will advise the participant to talk to their own doctor and to get treatment. The "Information about Blood Pressure" sheet will be given to participants if their blood pressure is high, which lists a variety of community resources.

   If a participant is pregnant, research staff will advise the participant to seek prenatal care.

   If a participant reports mar juana/cannabis use, although this is an illegal activity, the research staff will not take any actions. This study has a certificate of confidentiality, which provides additional protections for participants.

   Individuals who engage in illicit drug use in the past month will not be eligible for an in-person screen or to participate in the clinical laboratory portion of the study.

   Answers given about respiratory and gastrointestinal symptoms will be compared to the participants' previous answers, and if any symptoms have increased, Dr. Lipato will be asked to review the symptoms. In some cases, we may contact Dr. Lipato to determine if a session can proceed.

4. * **Will findings be disclosed to participants and/or any other person/group outside of the study team?**
   - (●) **Yes**
   - ( ) No

5. * **Describe a communication plan addressing:**
   1. What criteria will be used to determine which pertinent and/or incidental findings will be communicated, including the following for health related findings:
   --- The reliability of the tests/images, such as being done in a CLIA-certified lab,
   --- Whether the meaning and significance of the findings are known,
   --- Whether the findings reveal a significant risk of a serious health condition,
   --- Whether there is an accepted treatment for the health condition revealed by the findings, and
   --- The risks both of knowing and not knowing the findings, including risks to family members from genetic testing results.
   2. What information will be provided during the consent process about the plans for communicating pertinent and/or incidental findings;
   3. Whether the participants will be given the option of refusing communication of some or all types of pertinent and/or incidental findings to themselves, their family members, and/or any other individuals or groups; and
   4. To whom and by whom the findings will be communicated, when, and how.
   Findings for blood pressure and pregnancy will be communicated to participants verbally during the in-person screening visit. These findings will only be communicated to the participant and will be communicated by the study staff conducting the screening. In the event of high blood pressure or a positive pregnancy test, the study staff will communicate this information and advise the participant to seek treatment.

   The reliability of the blood pressure monitor is not known, nor is the reliability of the pregnancy tests we use.

   The blood pressure measurement could reveal a significant health risk, depending on how high it is.

   There is accepted treatment for high blood pressure.

There are no risks to knowing or now knowing about high blood pressure or pregnancy.

Participants do not have the option of refusing communication about their blood pressure reading or pregnancy test results.

Any adverse events may be reported to the study sponsor at FDA/NIH as needed/per their request.

Any information about adverse events reported to individuals outside of the study team will not include participants' names, DOBs, or other identifying information. Currently, the consent form indicates that such data might be shared with the study sponsor:

"Personal information about you might be shared with or copied by authorized representatives from the following organizations for the purposes of managing, monitoring and overseeing this study:
• The study Sponsor, representatives of the sponsor and other collaborating organizations
• Representatives of VCU and the VCU Health System
• Officials of the Department of Health and Human Services"

ID: HM20018580 **HM20018580** View: SF2 - Risk Benefit Complete

HM20018580 - Alison Breland
Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Risk Benefit Complete

Protocol Progress:
- **INITIAL SETUP**
- **BACKGROUND, RATIONALE & GOALS**
- **RESEARCH PLAN**
- **CONSENT PLAN**
- **RISKS, PRIVACY & CONFIDENTIALITY**

⑥ POPULATIONS WITH SPECIAL CONSIDERATIONS
⑦ INSTITUTIONAL REQUIREMENTS
⑧ DOCUMENTS

Click Continue below to go to the next section

ID: HM20018580 **HM20018580**

View: SF2 - Populations with Special Considerations

HM20018580 - Alison Breland
Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Populations with Special Considerations

1. * **Check all participant groups that will be either**

a) Specifically included in this study or

b) Discernable in the research data/specimens.

(Selections will branch)

- [ ] Children
- [ ] Emancipated minors
- [ ] Wards of the State
- [ ] Pregnant women or fetuses
- [ ] Neonates or Post-delivery Materials
- [ ] Prisoners
- [ ] Decisionally Impaired Adults
- [ ] VCU / VCUHS students or trainees
- [ ] VCU / VCU Health System employees
- [ ] Individuals with limited English proficiency
- [ ] Active military personnel
- [ ] Student populations in K-12 educational settings or other learning environments
- [ ] Members of a federally recognized American Indian and Alaska Native tribe
- [x] **None of the Above**

ID: HM20018580 **HM20018580**

View: SF2 - Populations with Special Considerations Section Complete

HM20018580 - Alison Breland
Assessing Electronic Cigarette Nicotine Flux (Project 2 Flux Study)

Populations with Special Considerations Section Complete

Protocol Progress:
- **INITIAL SETUP**
- **BACKGROUND, RATIONALE & GOALS**
- **RESEARCH PLAN**
- **CONSENT PLAN**
- **RISKS, PRIVACY & CONFIDENTIALITY**
- **POPULATIONS WITH SPECIAL CONSIDERATIONS**

⑦ INSTITUTIONAL REQUIREMENTS
⑧ DOCUMENTS

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