## **DEPARTMENT OF JUSTICE**

# **Drug Enforcement Administration**

[Docket No. DEA-392]

Bulk Manufacturer of Controlled Substances Application: American Radiolabeled Chem

**ACTION:** Notice of application.

**DATES:** Registered bulk manufacturers of the affected basic classes, and applicants therefore, may file written comments on or objections to the issuance of the proposed registration on or before August 20, 2018.

ADDRESSES: Written comments should be sent to: Drug Enforcement Administration, Attention: DEA Federal Register Representative/DRW, 8701 Morrissette Drive, Springfield, Virginia 22152.

SUPPLEMENTARY INFORMATION: The Attorney General has delegated his authority under the Controlled Substances Act to the Administrator of the Drug Enforcement Administration (DEA), 28 CFR 0.100(b). Authority to exercise all necessary functions with respect to the promulgation and implementation of 21 CFR part 1301, incident to the registration of

manufacturers, distributors, dispensers, importers, and exporters of controlled substances (other than final orders in connection with suspension, denial, or revocation of registration) has been redelegated to the Assistant Administrator of the DEA Diversion Control Division ("Assistant Administrator") pursuant to section 7 of 28 CFR part 0, appendix to subpart R.

In accordance with 21 CFR 1301.33(a), this is notice that on March 13, 2018, American Radiolabeled Chem, 101 Arc Drive, St. Louis, MO 63146 applied to be registered as a bulk manufacturer of the following basic classes of controlled substances:

Gamma Hydroxybutyric Acid         2010           Ibogaine         7260           Lysergic acid diethylamide         7315           Tetrahydrocannabinols         7370           Dimethyltryptamine         7435           1-[1-[2-Thinylcyclohexyl]piperidine         9145           Heroin         9200           Normorphine         9313           Amphetamine         1100           Methamphetamine         1105           Amobarbital         2125           Phenyclidine         7471           Phenylacetone         8501           Cocaine         9041           Cocaine         9050           Dihydrocodeine         9120           Oxycodone         9143           Hydromorphone         9150           Ecgorine         9180           Hydrocodone         9180           Hydrocodone         9193           Meperidine         9230           Metazocine         9240           Methadone         9250           Dextropropoxyphene, bulk (non-dosage forms)         9273           Morphine         9330           Oripavine         9330           Thebaine         9330	Controlled substance	Drug code	Schedule
Lysergic acid diethylamide         7315           Tetrahydrocannabinols         7370           Dimethyltryptamine         7435           1-[1-(2-Thienyl)cyclohexyl]piperidine         7470           Dihydromorphine         9145           Heroin         9200           Normorphine         9313           Amphetamine         1100           Methamphetamine         1105           Amobarbital         2125           Phencyclidine         7471           Phenyclacetone         8501           Cocaine         9041           Codeine         9050           Dihydrocodeine         9120           Oxycodone         9150           Ecgonine         9180           Hydrocodone         9230           Metazocine         9230           Metazocine         9230           Metadone         9250           Dextropropoxyphene, bulk (non-dosage forms)         9273	Gamma Hydroxybutyric Acid		
Tetrahydrocannabinols         7370           Dimethyltytpamine         7435           1-[1-(2-Thienyl)cyclohexyllpiperidine         7470           Dihydromorphine         9145           Heroin         9200           Normorphine         9313           Amphetamine         1100           Methamphetamine         1105           Amobarbital         2125           Phencyclidine         7471           Phenplacetone         8501           Cocaine         9041           Codeine         9050           Dihydrocodeine         9120           Oxycodone         9143           Hydromorphone         9150           Ecgonine         9180           Hydrocodone         9180           Hydrocodone         9180           Metazocine         9230           Metazocine         9240           Metazocine         9250           Dextropropoxyphene, bulk (non-dosage forms)         9273           Morphine         9330           Oripavine         9330           Thebaine         9333           Oxymorphone         9652           Phenazocine         9652           P			
Dimethyltryptamine         7435           1-[1-(2-Thienyl)cyclohexyl]piperidine         7470           Dihydromorphine         9145           Heroin         9200           Normorphine         9313           Amphetamine         1100           Methamphetamine         1105           Amobarbital         2125           Phencyclidine         7471           Phenylacetone         8501           Cocaine         9041           Codeine         9050           Dihydrocodeine         9120           Oxycodone         9143           Hydromorphone         9150           Ecgonine         9180           Hydrocodone         9193           Meperidine         9230           Metazocine         9250           Dextropropoxyphene, bulk (non-dosage forms)         9273           Morphine         9330           Oripavine         9330           Thebaine         9333           Oxymorphone         9652           Phenazocine         9715           Carfentanii         9743	Lysergic acid diethylamide		
1-[1-[2-Thienyl)cyclohexyl]piperidine       7470         Dihydromorphine       9145         Heroin       9200         Normorphine       9313         Amphetamine       1100         Methamphetamine       1105         Amobarbital       2125         Phencyclidine       7471         Phenylacetone       8501         Cocaine       9041         Codeine       9050         Dihydrocodeine       9120         Oxycodone       9143         Hydromorphone       9150         Egonine       9180         Hydrocodone       9193         Metazocine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9330         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743	Tetrahydrocannabinols		
Dihydromorphine       9145         Heroin       9200         Normorphine       9313         Amphetamine       1100         Methamphetamine       1105         Amobarbital       2125         Phencyclidine       7471         Phenylacetone       8501         Cocaine       9050         Codeine       9050         Dihydrocodeine       9120         Oxycodone       9143         Hydromorphone       9150         Ecgonine       9180         Hydrocodone       9180         Meperidine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9330         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743	Dimethyltryptamine		
Heroin       9200         Normorphine       9313         Amphetamine       1100         Methamphetamine       1105         Amobarbital       2125         Phencyclidine       7471         Phenylacetone       8501         Cocaine       9041         Codeine       9050         Dihydrocodeine       9120         Oxycodone       9143         Hydromorphone       9150         Ecgonine       9180         Hydrocodone       9180         Metazocine       9230         Metazocine       9230         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9330         Oripavine       9330         Thebaine       9330         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743	1-[1-(2-Thienyl)cyclohexyl]piperidine	7470	
Heroin       9200         Normorphine       9313         Amphetamine       1100         Methamphetamine       1105         Amobarbital       2125         Phencyclidine       7471         Phenylacetone       8501         Cocaine       9041         Codeine       9050         Dihydrocodeine       9120         Oxycodone       9143         Hydromorphone       9150         Ecgonine       9180         Hydrocodone       9180         Metacodone       9193         Meetazocine       9230         Metazocine       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9330         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743	Dihydromorphine	9145	
Amphetamine       1100         Methamphetamine       1105         Amobarbital       2125         Phencyclidine       7471         Phenylacetone       8501         Cocaine       9041         Codeine       9050         Dihydrocodeine       9120         Oxycodone       9143         Hydromorphone       9150         Ecgonine       9180         Hydrocodone       9193         Meperidine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9330         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743		9200	
Amphetamine       1100         Methamphetamine       1105         Amobarbital       2125         Phencyclidine       7471         Phenylacetone       8501         Cocaine       9041         Codeine       9050         Dihydrocodeine       9120         Oxycodone       9143         Hydromorphone       9150         Ecgonine       9180         Hydrocodone       9193         Meperidine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9330         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743	Normorphine	9313	
Amobarbital       2125         Phencyclidine       7471         Phenylacetone       8501         Cocaine       9041         Codeine       9050         Dihydrocodeine       9120         Oxycodone       9143         Hydromorphone       9150         Ecgonine       9180         Hydrocodone       9193         Meperidine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9300         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743		1100	ļ
Phencyclidine       7471         Phenylacetone       8501         Cocaine       9041         Codeine       9050         Dihydrocodeine       9120         Oxycodone       9143         Hydromorphone       9150         Ecgonine       9180         Hydrocodone       9180         Meperidine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9300         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743	Methamphetamine	1105	1
Phenylacetone       8501         Cocaine       9041         Codeine       9050         Dihydrocodeine       9120         Oxycodone       9143         Hydromorphone       9150         Ecgonine       9180         Hydrocodone       9193         Meperidine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9330         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743	Amobarbital	2125	1
Phenylacetone       8501         Cocaine       9041         Codeine       9050         Dihydrocodeine       9120         Oxycodone       9143         Hydromorphone       9150         Ecgonine       9180         Hydrocodone       9193         Meperidine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9330         Oripavine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743	Phencyclidine	7471	1
Cocaine       9041         Codeine       9050         Dihydrocodeine       9120         Oxycodone       9143         Hydromorphone       9150         Ecgonine       9180         Hydrocodone       9193         Meperidine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9300         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743		8501	1
Codeine       9050         Dihydrocodeine       9120         Oxycodone       9143         Hydromorphone       9150         Ecgonine       9180         Hydrocodone       9183         Meperidine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9300         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743		9041	1
Dihydrocodeine       9120         Oxycodone       9143         Hydromorphone       9150         Ecgonine       9180         Hydrocodone       9193         Meperidine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9300         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743		9050	1
Oxycodone       9143         Hydromorphone       9150         Ecgonine       9180         Hydrocodone       9193         Meperidine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9300         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743		9120	1
Hydromorphone       9150         Ecgonine       9180         Hydrocodone       9193         Meperidine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9300         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743		9143	1
Ecgonine       9180         Hydrocodone       9193         Meperidine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9300         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743		9150	I
Hydrocodone       9193         Meperidine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9300         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743		9180	I
Meperidine       9230         Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9300         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743		9193	1
Metazocine       9240         Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9300         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743		9230	1
Methadone       9250         Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9300         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743		9240	1
Dextropropoxyphene, bulk (non-dosage forms)       9273         Morphine       9300         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743			i
Morphine       9300         Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743			i
Oripavine       9330         Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743			i
Thebaine       9333         Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743			i
Oxymorphone       9652         Phenazocine       9715         Carfentanil       9743	·		i
Phenazocine         9715           Carfentanil         9743			i
Carfentanil 9743	, i		i
			i
	Fentanyl	9801	i

The company plans to manufacture small quantities of the above-listed controlled substances as radiolabeled compounds for biochemical research.

Dated: June 12, 2018.

# John J. Martin,

Assistant Administrator.

[FR Doc. 2018-13231 Filed 6-19-18; 8:45 am]

BILLING CODE 4410-09-P

### **DEPARTMENT OF JUSTICE**

### **Drug Enforcement Administration**

[Docket No. DEA-392]

Bulk Manufacturer of Controlled Substances Application: Cerilliant Corporation

**ACTION:** Notice of application.

**DATES:** Registered bulk manufacturers of the affected basic classes, and applicants therefore, may file written comments on or objections to the issuance of the proposed registration on or before August 20, 2018.

ADDRESSES: Written comments should be sent to: Drug Enforcement Administration, Attention: DEA Federal Register Representative/DRW, 8701 Morrissette Drive, Springfield, Virginia 22152.

SUPPLEMENTARY INFORMATION: The Attorney General has delegated his authority under the Controlled Substances Act to the Administrator of the Drug Enforcement Administration (DEA), 28 CFR 0.100(b). Authority to exercise all necessary functions with respect to the promulgation and implementation of 21 CFR part 1301, incident to the registration of manufacturers, distributors, dispensers,

importers, and exporters of controlled substances (other than final orders in connection with suspension, denial, or revocation of registration) has been delegated to the Assistant Administrator of the DEA Diversion Control Division ("Assistant Administrator") pursuant to section 7 of 28 CFR part 0, appendix to subpart R.

In accordance with 21 CFR 1301.33(a), this is notice that on May

4th, 2018, Cerilliant Corporation, 811 Paloma Drive, Suite A, Round Rock, Texas 78665 applied to be registered as a bulk manufacturer of the following basic classes of controlled substances:

Controlled substance	Drug code	Schedu
3-Fluoro-N-methylcathinone (3–FMC)	1233	I
Cathinone	1235	1
Methcathinone	1237	1
I-Fluoro-N-methylcathinone (4-FMC)	1238	1
Pentedrone (α-methylaminovalerophenone)	1246	I
Mephedrone (4-Methyl-N-methylcathinone)	1248	!
-Methyl-N-ethylcathinone (4–MEC)	1249	!
laphyrone	1258	!
-Ethylamphetamine	1475	!
,N-Dimethylamphetamine	1480	!
enethylline	1503	!
minorex	1585	!
-Methylaminorex (cis isomer)	1590	!
amma Hydroxybutyric Acid	2010	!
ethaqualone	2565	!
NH-250 (1-Pentyl-3-(2-methoxyphenylacetyl)indole)	6250	!
R-18 (Also known as RCS-8) (1-Cyclohexylethyl-3-(2-methoxyphenylacetyl)indole)	7008	!
DB-FUBINACA (N-(1-amino-3,3-dimethyl-1-oxobutan-2-yl)-1-(4-fluorobenzyl)-1H-indazole-3-carboxamide)	7010	!
Fluoro-UR-144 and XLR11 [1-(5-Fluoro-pentyl)1H-indol-3-yl](2,2,3,3-tetramethylcyclopropyl)methanone	7011	!
B-FUBINACA (N-(1-amino-3-methyl-1-oxobutan-2-yl)-1-(4-fluorobenzyl)-1H-indazole-3-carboxamide)	7012	!
VH-019 (1-Hexyl-3-(1-naphthoyl)indole)	7019	1
DMB-FUBINACA (Methyl 2-(1-(4-fluorobenzyl)-1H-indazole-3-carboxamido)-3,3-dimethylbutanoate)	7020	!
JB-AMB, MMB-Fubinaca 2-(1-(4-fluorobenzyl)-1Hindazole-3-carboxamido)-3-methylbutanoate	7021	!
B-PINACA (N-(1-amino-3-methyl-1-oxobutan-2-yl)-1-pentyl-1H-indazole-3-carboxamide)	7023	1
HJ-2201 [1-(5-fluoropentyl)-1H-indazol-3-yl](naphthalen-1-yl)methanone	7024	!
B-CHMINACA (N-(1-amino-3-methyl-1-oxobutan-2-yl)-1-(cýclohexylmethyl)-1H-indazole-3-carboxamide	7031	I
AB-CHMINACA (N-(1-amino-3,3dimethyl-1-oxobutan-2-yl)-1-(cyclohexylmethyl)-1H-indazole-3-carboxamide)	7032	1
F-AMB (Methyl 2-(1-(5-fluoropentyl)-1H-indazole-3-carboxamido)-3-methylbutanoate)	7033	!
-ADB; 5F-MDMB-PINACA (Methyl 2-(1-(5-fluoropentyl)-1H-indazole-3-carboxamido)-3,3-dimethylbutanoate)	7034	!
DB-PINACA (N-(1-amino-3,3-dimethyl-1-oxobutan-2-yl)-1-pentyl-1H-indazole-3-carboxamide)	7035	I
DMB_CHMICA, MMB_CHMINACA (Methyl 2-(1-(cyclohexylmethyl)-1H-indole-3-carboxamido)-3,3-dimethylbutanoate).	7042	1
PINACA and AKB48 N-(1-Adamantyl)-1-pentyl-1H-indazole-3-carboxamide	7048	!
F-APINACA, 5F-AKB48 (N-(adamantan-1-yl)-1-(5-fluoropentyl)-1H-indazole-3-carboxamide)	7049	!
NH-081 (1-Pentyl-3-(1-(4-methoxynaphthoyl) indole)	7081	!
R-19 (Also known as RCS-4) (1-Pentyl-3-[(4-methoxy)-benzoyl]indole)	7104	!
WH-018 (also known as AM678) (1-Pentyl-3-(1-naphthoyl)indole)	7118	!
NH-122 (1-Pentyl-3-(4-methyl-1-naphthoyl)indole)	7122	!
R-144 (1-Pentyl-1H-indol-3-yl)(2,2,3,3-tetramethylcyclopropyl)methanone	7144	!
NH-073 (1-Butyl-3-(1-naphthoyl)indole)	7173	!
NH–200 (1-[2-(4-Morpholinyl)ethyl]-3-(1-naphthoyl)indole)	7200	!
M2201 (1-(5-Fluoropentyl)-3-(1-naphthoyl)indole)	7201	!
NH-203 (1-Pentyl-3-(2-chlorophenylacetyl)indole)	7203	!
3–22 (Quinolin-8-yl 1-pentyl-1H-indole-3-carboxylate)	7222	!
-PB-22 (Quinolin-8-yl 1-(5-fluoropentyl)-1H-indole-3-carboxylate)	7225	
pha-ethyltryptamine	7249	!
P-47,497 (5-(1,1-Dimethylheptyl)-2-[(1R,3S)-3-hydroxycyclohexyl-phenol)	7297	!
P–47,497 C8 Homologue (5-(1,1-Dimethyloctyl)-2-[(1R,3S)3-hydroxycyclohexyl-phenol)	7298	!
sergic acid diethylamide	7315	1
5-Dimethoxy-4-(n)-propylthiophenethylamine (2C-T-7)	7348	!
arihuana	7360	
strahydrocannabinols	7370	!
ırahexyl	7374	<u> </u>
escaline	7381	<u> </u>
(4-Ethylthio-2,5-dimethoxyphenyl) ethanamine (2C-T-2)	7385	1
4,5-Trimethoxyamphetamine	7390	ļ.
3romo-2,5-dimethoxyamphetamine	7391	1
3romo-2,5-dimethoxyphenethylamine	7392	1
Methyl-2,5-dimethoxyamphetamine	7395	1
5-Dimethoxyamphetamine	7396	1
VH-398 (1-Pentyl-3-(4-chloro-1-naphthoyl)indole)	7398	1
5-Dimethoxy-4-ethylamphetamine	7399	1
4-Methylenedioxyamphetamine	7400	1
Methoxy-3,4-methylenedioxyamphetamine	7401	1
-Hydroxy-3,4-methylenedioxyamphetamine	7402	1
4-Methylenedioxy-N-ethylamphetamine	7404	1
4-Methylenedioxymethamphetamine	7405	1

Controlled substance	Drug code	Schedule
4-Methoxyamphetamine	7411	ı
5-Methoxy-N-N-dimethyltryptamine	7431	1
Alpha-methyltryptamine	7432	1
Bufotenine  Diethyltryptamine	7433 7434	1
Dimethyltryptamine	7435	i
Psilocybin	7437	İ
Psilocyn	7438	1
5-Methoxy-N,N-diisopropyltryptamine	7439	ļ
N-Ethyl-1-phenylcyclohexylamine	7455 7458	1
1-[1-(2-Thienyl)cyclohexyl]piperidine	7470	i
N-Benzylpiperazine	7493	i
4-Methyl-alphapyrrolidinopropiophenone (4-MePPP)	7498	1
2-(2,5-Dimethoxy-4-methylphenyl) ethanamine (2C–D)	7508	ļ.
2-(2,5-Dimethoxy-4-ethylphenyl) ethanamine (2C–E)	7509	1
2-(2,5-Dimethoxyphenyl) ethanamine (2C-H)	7517 7518	1
2-(4-Chloro-2,5-dimethoxyphenyl) ethanamine (2C–C)	7519	i
2-(2,5-Dimethoxy-4-nitro-phenyl) ethanamine (2C–N)	7521	İ
2-(2,5-Dimethoxy-4-(n)-propylphenyl) ethanamine (2C-P)	7524	1
2-(4-Isopropylthio)-2,5-dimethoxyphenyl) ethanamine (2Ć-T-4)	7532	!
MDPV (3,4-Methylenedioxypyrovalerone)	7535 7536	1
2-(4-chloro-2,5-dimethoxyphenyl)-N-(2-methoxybenzyl) ethanamine (256–NBOMe)	7536 7537	i
2-(4-iodo-2,5-dimethoxyphenyl)-N-(2-methoxybenzyl) ethanamine (251–NBOMe)	7538	i
Methylone (3,4-Methylenedioxy-N-methylcathinone)	7540	İ
Butylone	7541	1
Pentylone	7542	!
alpha-pyrrolidinopentiophenone (α-PVP)	7545 7546	1
alpha-pyrrolidinobutiophenone (α-PBP)	7546 7694	i
Acetyldihydrocodeine	9051	i
Benzylmorphine	9052	1
Codeine-N-oxide	9053	1
Descriptine	9055	!
Codeine methylbromide	9070 9145	1
Heroin	9200	i
Hydromorphinol	9301	i
Methyldesorphine	9302	1
Methyldihydromorphine	9304	!
Morphine methylbromide	9305	1
Morphine methylsulfonate	9306 9307	1
Normorphine	9313	i
Pholcodine	9314	İ
U-47700 (3,4-dichloro-N-[2-(dimethylamino)cyclohexyl]-N-methylbenzamide)	9547	1
AH-7921 (3,4-dichloro-N-[(1-dimethylamino)cyclohexylmethyl]benzamide)	9551	1
MT45	9560	1
Acetylmethadol	9601 9602	1
Alphacetylmethadol except levo-alphacetylmethadol	9603	i
Alphameprodine	9604	1
Alphamethadol	9605	Į.
Betacetylmethadol	9607	1
Betameprodine	9608 9609	I
Betaprodine	9611	i
Dipipanone	9622	Í
Hydroxypethidine	9627	1
Noracymethadol	9633	1
Norlevorphanol	9634	1
Normethadone	9635	I
Trimeperidine	9646 9647	1
1-Methyl-4-phenyl-4-propionoxypiperidine	9661	i
Tilidine	9750	İ
Acryl fentanyl (N-(1-phenethylpiperidin-4-yl)-N-phenylacrylamide)	9811	1
Para-Fluorofentanyl	9812	Į.
3-Methylfentanyl	9813	I
Alpha-methylfentanyl	9814 9815	1
Acetyl-alpha-methylfentanylOrthofluorofentanyl N-(2-fluorophenyl)-N-(1-phenethylpiperidin-4yl)propionamide	9815 9816	Í
Cranonacionality 14-(2-inaciophienty)-14-(1-phienethylphienian-4yl)propionalinae	3010	

Subyy  Fentany    9822   1	Controlled substance	Drug code	Schedule
Para - Thromobulyri Fentanyi (	Acetyl Fentanyl (N-(1-phenethylpiperidin-4-yl)-N-phenylacetamide)	9821	1
Section   Sect	Butyryl Fentanyl		1
Methoxyacetyl Fontanyl			!
Para-Chiroisobutyri Fentanyi   9826   1			
SebutyNy Fentany    9827			li
Bela-hytoxyfentany    9830			i
Alpha-methylthiolentanyl   9832   1	Beta-hydroxyfentanyl		1
9-Methythiciontary    9833	Beta-hydroxy-3-methylfentanyl	9831	1
Furnary (in-tanyl (in-tanyl (in-tanyl)-N-phenylfuran-2-carboxamide)   9834   1   1   1   1   1   1   1   1   1	Alpha-methylthiofentanyl		!
Thiofentary			!
Bela-hydroxythiofentanyl   9835   1     Para-methoxythytyt fentanyl   9837   1     Defentanil   9838   1     Sakenyl Fentanyl Fentanyl N-(1-phenethylipiperidin-4-yl) N-phenyltetrahydrofuran2-carboxamide   9843   1     Petrahydrofuranyl Fentanyl N-(1-phenethylipiperidin-4-yl) N-phenyltetrahydrofuran2-carboxamide   9843   1     Syclopproyl Fentanyl   9847   1     Petrahydrofuranyl Fentanyl N-(1-phenethylipiperidin-4-yl) N-phenyltetrahydrofuran2-carboxamide   9843   1     Syclopproyl Fentanyl   9847   1     Petrahydrofuranyl		i	
Para-methoxybutyryl fentanyl			i
Octentani			i
Tetrahyrdoruranyl Fentanyl N-(1-phenethylipiperidin-4-yl)-N-phenyltetrahydrofuran2-carboxamide   9845   1	Ocfentanil		1
Syclopenty  Fentany    Sept   Fentany    Sept   Syclopenty  Fentany    Sept   Syclopenty  Fentany    Sept   Syclopenty  Fentany  related-compounds as defined in 21 CFR 1308.11(h)   Sept   Syclopenty  Fentany    Sept   Syclopenty  Fentany    Sept   Syclopenty  Fentany    Sept   Syclopenty  Fentany    Sept   Syclopenty  Fentany    Syclopenty  Fentany    Syclopenty  Fentany    Syclopenty  Fentany    Syclopenty  Fentany    Syclopenty  Fentany    Syclopenty  Fentany    Syclopenty  Fentany    Syclopenty  Fentany    Syclopenty  Fentany    Syclopenty  Fentany    Syclopenty  Fentany    Syclopenty  Fentany    Syclopenty  Fentany    Syclopenty  Syclopenty    Syclopenty  Fentany    Syclopen	Valeryl Fentanyl	9840	1
Öyclopentyl fentanyl         9847             Fentanyl related-compounds as defined in 21 CFR 1308.11(h)         9850             Amphetamine         1100             Methamphetamine         1100             Lisdexamfetamine         1631             Hennotarbital         1631             Methylphenidate         1724             Amobarbital         2270             Secobarbital         2315             Secobarbital         2315             Secobarbital         2550             Nabione         7379             1-Phenylcyclohexylamine         7460             Phencycyclohexylamine         7471             Phencyclohexylamine         7471             Phencyclohexylamine         7471             Phencyclohexylamine         7471             Pieperdinocyclohexanecarbonitrile         8633             Aphaprodine         910             Cocaine         9010             Dividencedien         912             Dividencedien         913             Dividencedien         913             Dividencedien         913             Dividencedien         913             Dividencedien         913             Dividencemph			1
Fentanyi related-compounds as defined in 21 CFR 1308.11(h) Methamphetamine Methamphetamine Methamphetamine Methamphetamine Methyphenidate Met			
Amphetamine   1100   II   Iusidexamfetamine   1105   II   Iusidexamfetamine   1205   II   Phenmetrazire   1631   II   Methylphenidate   1724   II   Amobarbital   2125   II   Pentobarbital   2270   II   Secobarbital   2271   II   Secobarbital   2273   II   Glutethimide   2550   II   Nabilone   7379   II   I-Phenylcyclohexylamine   7460   II   Phencylcyclohexylamine   7460   II   Phencylcyclohexylamine   7471   II   I-Phendino-N-phenethyl-Apiperidine (ANPP)   8333   II   I-Phenylcyclohexanearbonitrile   8603   II   Alphaprodine   9010   II   Cocaine   9011   II   Cocaine   9011   II   Cocaine   9011   II   Cocaine   9012   II   Ibiydrocodeine   9150   II   Ibiydrocodeine   9150   II   Ibiydrocodeine   9150   II   Ibiydrocodene   9150   II   Ibiydroco			
Methamphetamine         1105         I           Izledacamfetamine         1205         I           Phenmetrazine         1631         I           Methylphenidate         1724         II           Amobarbital         2125         I           Pentobarbital         2270         I           Secobarbital         2315         I           Glutethimide         2550         I           Nabilone         7479         I           Phencyclidine         7460         I           Phencyclidine         7471         II           4 Anilno-N-phenethyl-4-piperidine (ANPP)         833         I           1 Piperidinocytohexancearbonitrile         8603         I           1 Alphaprodine         9010         II           Cocaine         9041         I           Cocaine         9041         I           Cocaine         9050         II           Dilydrocodine         9120         I           Divocodine         913         I           Lydromorphone         9150         I           Diphenoxylate         9170         I           Egoparine         9180         I			1
Lisdexamfetamine   1205   1   1631   1   1   1631   1   1   1   1   1   1   1   1   1			
Phemetrazine   1631   1631   1631   1631   1631   1724   1631   1724   1631   1724   1631   1724   1841   1724   1841   1724   1841   1724   1841   1725   1851	Lisdexamfetamine		
Amobarbital 2125   1 Pentobarbital 2270   1 Secobarbital 2770   1	Phenmetrazine		
Pentobarbital   2270	Methylphenidate	1724	II
Secobarbital         2315         I           Gluterhimide         2550         I           Nabilone         7379         II           1-Phenylcyclohexylamine         7460         II           Phencyclidine         7471         II           4-Anilino-N-phenethyl-4-piperidine (ANPP)         8333         II           1-Piperidinocyclohexanearbonitrile         8603         II           Alphaprodine         9010         II           Cocaine         9041         II           Cocaine         9050         II           Dibydrocodeine         9120         II           Oxycodone         9143         II           Hydromorphone         9150         II           Diphenoxylate         9170         II           Cogonine         9180         II           Eitylmorphine         9180         II           Hydrocodone         91910         II           Levorphanol         9210         II           Levorphanol         9220         II           Somethadone         9226         II           Meperidine intermediate-A         9232         II           Meperidine intermediate-B         9233	Amobarbital		
Subtehmide   2550   1     Nabilone   7379   1		_	
Nabilone   7379   1   1   1   1   1   1   1   1   1			
1-Phenylcyclohexylamine			
Phencyclidine			
A-Anilino-N-phenethyl-4-piperidine (ANPP)   8333   1   1-Piperidinocyclohexanecarbonitrile   8603   1   1   1   1   1   1   1   1   1			
1-Piperidinocyclohexanecarbonitrile			
Cocaine         9041   Il           Codeine         9050   Il           Dihydrocodeine         9120   II           Dxycodone         9143   Il           Hydromorphone         9150   II           Diphenoxylate         9170   II           Ecgonine         9180   II           Ethylmorphine         9180   II           Hydrocodone         9193   II           Levorethorphan         9210   II           Levorphanol         9220   II           Isomethadone         9220   II           Meperdine intermediate-A         9230   II           Meperdine intermediate-A         9232   II           Meperdine intermediate-B         9233   II           Metazocine         9234   II           Metazocine         9240   II           Methadone intermediate-C         9234   II           Methadone intermediate         9250   II           Methadone intermediate         9250   II           Methadone intermediate         9250   II           Methadone intermediate         9251   II           Dextropropoxyphene, bulk (non-dosage forms)         9273   II           Morphine         9333   II           Noroxymorphone         9652   II           Noroxymorphone	1-Piperidinocyclohexanecarbonitrile	8603	II
Codeine         9050 II           Dihydrocodeine         9120 II           Divycodone         9143 II           Hydromorphone         9150 II           Diphenoxylate         9170 II           Ecgonine         9180 II           Ethylmorphine         9180 II           Hydrocodone         9193 II           Levomethorphan         9210 II           Levorphanol         9220 II           Isomethadone         9226 II           Meperidine intermediate-A         9230 II           Meperidine intermediate-B         9233 II           Meperidine intermediate-B         9233 II           Metazocine         9240 II           Methadone intermediate         9250 II           Methadone intermediate         9250 II           Methadone intermediate         9250 II           Morphine         9250 II           Levo-alphacetylmethadol         9333 II           Morphine         9333 II           Levo-alphacetylmethadol         9652 II           Noroxymorphone         9652 II           Noroxymorphone         9652 II           Noroxymorphone         9668 II           Noroxymorphone         9668 II           Remifentanii <td>Alphaprodine</td> <td></td> <td></td>	Alphaprodine		
Dihydrocodeine       9120 II         Oxycodone       9143 II         Hydromorphone       9150 II         Diphenoxylate       9170 II         Ecgonine       9180 II         Ethylmorphine       9180 II         Hydrocodone       9193 II         Levomethorphan       9210 II         Levorethorphan       9220 II         Isomethadone       9220 II         Meperidine       9230 II         Meperidine intermediate-A       9232 II         Meperidine intermediate-B       9233 II         Metperidine intermediate-C       9234 II         Metazocine       9240 II         Methadone intermediate       9250 II         Methadone intermediate       9250 II         Dextropropoxyphene, bulk (non-dosage forms)       9273 II         Morphine       9300 II         Thebaine       9333 II         Levo-alphacetylmethadol       9688 II         Oxymorphone       9652 II         Noroxymorphone       9652 II         Noroxymorphone       9652 II         Racemethorphan       9732 II         Alfentanil       9739 II         Remifentanil       9739 II         Garfentanil       9740			
Oxycodone       9143       II         Hydromorphone       9150       II         Diphenoxylate       9170       II         Ecgonine       9180       II         Ethylmorphine       9190       II         Hydrocodone       9193       II         Levomethorphan       9210       II         Levorphanol       9220       II         Isomethadone       9226       II         Meperidine       9230       II         Meperidine intermediate-A       9232       II         Meperidine intermediate-B       9233       II         Metpacidine intermediate-B       9234       II         Metpacidine intermediate-B       9234       II         Metpacidine intermediate-B       9234       II         Metpacidine       9240       II         Metpacidine       9240       II         Metpacidine intermediate-B       9234       II         Metpacidine intermediate-B       9234       II         Metpacidine       9254       II         Detactporpoxyphene, bulk (non-dosage forms)       9273       II         Morphine       9333       II         Levo-alphacetylmethadol			
Hydromorphone 9150 II	·		
Díphenoxýlate       9170       II         Eogonine       9180       II         Ethylmorphine       9190       II         Hydrocodone       9193       II         Levomethorphan       9210       II         Levorphanol       9220       II         Isomethadone       9226       II         Meperidine       9230       II         Meperidine intermediate-A       9232       II         Meperidine intermediate-B       9233       II         Meperidine intermediate-C       9234       II         Methadone       9250       II         Methadone intermediate       9250       II         Dextropropoxyphene, bulk (non-dosage forms)       9273       II         Morphine       9300       II         Thebaine       9330       II         Levo-alphacetylmethadol       9648       II         Oxymorphone       9652       II         Noroxymorphone       9652       II         Racemethorphan       9732       II         Alfentanil       9732       II         Remifentanil       9739       II         Remifentanil       9740       II			
Ecgonine       9180       II         Ethylmorphine       9190       II         Hydrocodone       9193       II         Levomethorphan       9210       II         Levorphanol       9220       II         Isomethadone       9226       II         Meperidine intermediate-A       9230       II         Meperidine intermediate-B       9233       II         Meperidine intermediate-C       9234       II         Metazocine       9240       II         Methadone intermediate       9250       II         Methadone intermediate       9250       II         Morphine       9254       II         Dextropropoxyphene, bulk (non-dosage forms)       9273       II         Morphine       9333       II         Levo-alphacetylmethadol       9648       II         Oxymorphone       9652       II         Noroxymorphone       9668       II         Thiafentanil       9732       II         Remifentanil       9737       II         Remifentanil       9739       II         Sufentanil       9743       II         Tapentadol       9780       II			
Hydrocodone 9193 II Levomethorphan 9210 II Levomethorphan 9210 II Levomethorphan 9220 II II Levorphanol 9220 II II Levorphanol 9220 II II Isomethadone 9226 II Meperidine Meperidine intermediate-A 9233 II Meperidine intermediate-B 9233 II Meperidine intermediate-B 9233 II Meperidine intermediate-B 9234 II Meperidine intermediate-C 9234 II Methadone 9250 II Methadone 9250 II Methadone 9250 II Methadone 9250 II Methadone 9250 II Methadone 9250 II Dextropropoxyphene, bulk (non-dosage forms) 9273 II Morphine 9333 II Levo-alphacetylmethadol 9333 II Levo-alphacetylmethadol 9648 II Doxymorphone 9652 II Noroxymorphone 9658 II Thiafentanil 97729 II Racemethorphan 9732 II Alfentanil 9733 II Remifentanil 9733 II Remifentanil 9733 II Sufentanil 9733 II Sufentanil 9734 II Carfentanil 9734 II Tapentadol 9780 II	Ecgonine	9180	II
Levomethorphan       9210       II         Levorphanol       9220       II         Issomethadone       9226       II         Meperidine       9230       II         Meperidine intermediate-A       9232       II         Meperidine intermediate-B       9233       II         Meperidine intermediate-C       9234       II         Methadone       9240       II         Methadone intermediate       9250       II         Methadone intermediate       9250       II         Dextropropoxyphene, bulk (non-dosage forms)       9273       II         Morphine       9300       II         Thebaine       9333       II         Levo-alphacetylmethadol       9648       II         Oxymorphone       9652       II         Noroxymorphone       9668       II         Noroxymorphone       9668       II         Racemethorphan       9732       II         Alfentanil       9739       II         Suffentanil       9743       II         Tapentadol       9780       II	Ethylmorphine	9190	
Levorphanol       9220       II         Isomethadone       9226       II         Meperidine       9230       II         Meperidine intermediate-A       9232       II         Meperidine intermediate-B       9233       II         Meperidine intermediate-C       9234       II         Metazocine       9240       II         Methadone       9250       II         Methadone intermediate       9254       II         Dextropropoxyphene, bulk (non-dosage forms)       9273       II         Morphine       9300       II         Thebaine       9333       II         Levo-alphacetylmethadol       9648       II         Oxymorphone       9652       II         Noroxymorphone       9668       II         Thiafentanil       9732       II         Racemethorphan       9732       II         Alfentanil       9737       II         Remifentanil       9739       II         Carfentanil       9740       II         Carfentanil       9743       II         Tapentadol       9780       II			
Somethadone   9226   II			
Meperidine       9230 II         Meperidine intermediate-A       9232 II         Meperidine intermediate-B       9233 II         Meperidine intermediate-C       9244 II         Metazocine       9250 II         Methadone       9250 II         Methadone intermediate       9254 II         Dextropropoxyphene, bulk (non-dosage forms)       9273 II         Morphine       9300 II         Thebaine       9333 II         Levo-alphacetylmethadol       9648 II         Oxymorphone       9652 II         Noroxymorphone       9668 II         Thiafentanil       9732 II         Racemethorphan       9732 II         Alfentanil       9737 II         Remifentanil       9739 II         Sufentanil       9740 II         Carfentanil       9740 II         Tapentadol       9780 II			11 
Meperidine intermediate-A       9232       II         Meperidine intermediate-B       9233       II         Meperidine intermediate-C       9234       II         Metazocine       9240       II         Methadone       9250       II         Methadone intermediate       9254       II         Dextropropoxyphene, bulk (non-dosage forms)       9273       II         Morphine       9300       II         Thebaine       9333       II         Levo-alphacetylmethadol       9648       II         Oxymorphone       9652       II         Noroxymorphone       9668       II         Thiafentanil       9729       II         Racemethorphan       9732       II         Alfentanil       9737       II         Sufentanil       9739       II         Carfentanil       9740       II         Tapentadol       9780       II			
Meperidine intermediate-B       9233       II         Meperidine intermediate-C       9240       II         Methadone       9250       II         Methadone intermediate       9250       II         Dextropropoxyphene, bulk (non-dosage forms)       9273       II         Morphine       9300       II         Thebaine       9333       II         Levo-alphacetylmethadol       9648       II         Oxymorphone       9652       II         Noroxymorphone       9668       II         Thiafentanil       9729       II         Racemethorphan       9732       II         Alfentanil       9737       II         Sufentanil       9739       II         Carfentanil       9740       II         Tapentadol       9780       II	·		
Metazocine       9240       II         Methadone       9250       II         Methadone intermediate       9254       II         Dextropropoxyphene, bulk (non-dosage forms)       9273       II         Morphine       9300       II         Thebaine       9333       II         Levo-alphacetylmethadol       9648       II         Oxymorphone       9652       II         Noroxymorphone       9668       II         Thiafentanil       9729       II         Racemethorphan       9732       II         Alfentanil       9737       II         Remifentanil       9739       II         Sufentanil       9740       II         Carfentanil       9743       II         Tapentadol       9780       II	Meperidine intermediate-B		II
Methadone       9250       II         Methadone intermediate       9254       II         Dextropropoxyphene, bulk (non-dosage forms)       9273       II         Morphine       9300       II         Thebaine       9333       II         Levo-alphacetylmethadol       9648       II         Oxymorphone       9652       II         Noroxymorphone       9668       II         Thiafentanil       9729       II         Racemethorphan       9732       II         Alfentanil       9737       II         Remifentanil       9739       II         Sufentanil       9740       II         Carfentanil       9743       II         Tapentadol       9780       II	Meperidine intermediate-C		
Methadone intermediate       9254       II         Dextropropoxyphene, bulk (non-dosage forms)       9273       II         Morphine       9300       II         Thebaine       9333       II         Levo-alphacetylmethadol       9648       II         Oxymorphone       9652       II         Noroxymorphone       9668       II         Thiafentanil       9729       II         Racemethorphan       9732       II         Alfentanil       9737       II         Remifentanil       9739       II         Sufentanil       9740       II         Carfentanil       9743       II         Tapentadol       9780       II	Metazocine		
Dextropropoxyphene, bulk (non-dosage forms)       9273       II         Morphine       9300       II         Thebaine       9333       II         Levo-alphacetylmethadol       9648       II         Oxymorphone       9652       II         Noroxymorphone       9668       II         Thiafentanil       9729       II         Racemethorphan       9732       II         Alfentanil       9737       II         Remifentanil       9739       II         Sufentanil       9740       II         Carfentanil       9743       II         Tapentadol       9780       II			
Morphine       9300       II         Thebaine       9333       II         Levo-alphacetylmethadol       9648       II         Oxymorphone       9652       II         Noroxymorphone       9668       II         Thiafentanil       9729       II         Racemethorphan       9732       II         Alfentanil       9737       II         Remifentanil       9739       II         Sufentanil       9740       II         Carfentanil       9743       II         Tapentadol       9780       II			
Thebaine       9333       II         Levo-alphacetylmethadol       9648       II         Oxymorphone       9652       II         Noroxymorphone       9668       II         Thiafentanii       9729       II         Racemethorphan       9732       II         Alfentanii       9737       II         Remifentanii       9739       II         Sufentanii       9740       II         Carfentanii       9743       II         Tapentadol       9780       II			
Levo-alphacetylmethadol       9648       II         Oxymorphone       9652       II         Noroxymorphone       9668       II         Thiafentanil       9729       II         Racemethorphan       9732       II         Alfentanil       9737       II         Remifentanil       9739       II         Sufentanil       9740       II         Carfentanil       9743       II         Tapentadol       9780       II	Thebaine		
Oxymorphone       9652       II         Noroxymorphone       9668       II         Thiafentanil       9729       II         Racemethorphan       9732       II         Alfentanil       9737       II         Remifentanil       9739       II         Sufentanil       9740       II         Carfentanil       9743       II         Tapentadol       9780       II	Levo-alphacetylmethadol		
Thiafentanil       9729       II         Racemethorphan       9732       II         Alfentanil       9737       II         Remifentanil       9739       II         Sufentanil       9740       II         Carfentanil       9743       II         Tapentadol       9780       II	Oxymorphone		
Racemethorphan       9732       II         Alfentanil       9737       II         Remifentanil       9739       II         Sufentanil       9740       II         Carfentanil       9743       II         Tapentadol       9780       II	Noroxymorphone		
Alfentanil       9737       II         Remifentanil       9739       II         Sufentanil       9740       II         Carfentanil       9743       II         Tapentadol       9780       II			
Remifentanil       9739       II         Sufentanil       9740       II         Carfentanil       9743       II         Tapentadol       9780       II			
Sufentanil       9740   II         Carfentanil       9743   II         Tapentadol       9780   II			
Carfentanil         9743         II           Tapentadol         9780         II			
Tapentadol	Carfentanil		
Fentanyl	Tapentadol	9780	
- I	Fentanyl	9801	II

The company plans to manufacture small quantities of the listed controlled substances to make reference standards which will be distributed to its customers.

Dated: June 12, 2018.

#### John J. Martin,

Assistant Administrator.

[FR Doc. 2018–13221 Filed 6–19–18; 8:45 am]

BILLING CODE 4410-09-P

#### NATIONAL SCIENCE FOUNDATION

Request for Information— Environmental Research and Education, National Security, and Economic Competitiveness

**AGENCY:** National Science Foundation. **ACTION:** Notice of Request for Information.

SUMMARY: The purpose of this Request for Information (RFI) is to seek input from the public on possible future directions for fundamental environmental science and education. The RFI intends to gather views from external stakeholders on what environmental research and education is needed to further advance national security and economic competitiveness. NSF's Advisory Committee for Environmental Research and Education (AC ERE) will use the input to develop a report on these topics to inform NSF and the community.

**DATES:** Written comments must be submitted by August 20, 2018. **ADDRESSES:** Responses will be submitted via online survey (https://www.surveymonkey.com/r/ACERE-RFI-2018). See the instructions in the **SUPPLEMENTARY INFORMATION** for guidelines.

## FOR FURTHER INFORMATION CONTACT:

Contact Leah Nichols, Executive Secretary for the AC ERE, at *lenichol@nsf.gov* for further information.

SUPPLEMENTARY INFORMATION: The National Science Foundation's Advisory Committee for Environmental Research and Education (AC ERE) invites your input on possible environmental research and education directions to further advance national security and economic competitiveness. The purpose of the AC ERE is to:

- Provide advice, recommendations and oversight concerning support for the NSF's environmental research and education portfolio;
- Be a base of contact with the scientific community to inform NSF of the impact of its research support and NSF-wide policies on the scientific community;

- Serve as a forum for consideration of interdisciplinary environmental topics as well as environmental activities in a wide range of disciplines;
- Provide broad input into long-range plans and partnership opportunities;
   and
- Provide advice about program management, overall program balance, and other aspects of program performance for environmental research and education activities.

The Committee has been interested broadly in fundamental environmental research and education that also has societal utility. It has recently focused its attention on two major topics where there is broad consensus on the importance of the research to date, but where significant research questions remain. These topics are at the nexus of environmental science and engineering with economic growth and competitiveness, and the relationship of environmental factors to national and human security. The Committee is particularly interested in approaches that promote convergent research across disciplines and sectors to address economic competitiveness and economic security.

To identify emerging research questions in these areas, the committee is reaching out to interested and knowledgeable members of the scientific community in all disciplines and interdisciplinary areas for their views. The AC ERE is also interested in the views of professionals who are directly involved in decision-making or operational activities in these areas, and who therefore can provide a very practical perspective on high-priority research and education topics.

The AC ERE invites individuals and groups of individuals to provide input on one or both of the topics described above via this link: https://www.surveymonkey.com/r/ACERE-RFI-2018.

The online submission form requires the following information:

- 1. Author name(s) and affiliation(s);
- 2. Valid contact email address;
- 3. Title of the response;
- 4. An abstract (200 words or less) summarizing the response; and
- 5. Checkbox to consent to allow the AC ERE to display the submitted information, consistent with the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (https://creativecommons.org/licenses/by-nc-nd/4.0/legalcode).

You will also be asked to identify whether your response focuses on questions in environmental research and education that are pertinent to (a)

- economic growth and competitiveness, (b) national and human security, or (c) both topics. The submission form includes the following question prompts. Respondents may respond to all or any subset of these questions.
- What are the major environmental research priorities with the greatest potential to contribute to economic growth and competitiveness and/or national or human security/wellbeing? Priorities could, for example, include empirical, theoretical, or qualitative analyses, establishing baselines, and/or experimental studies. (500 words or less)
- What methodologies should be used for conducting such studies?
  Methodological recommendations could include the prospects for interdisciplinary and/or convergent research approaches, including modeling, theory, empirical, qualitative, and/or experimental studies.
  Methodological recommendations could also discuss the scope of studies, e.g. the balance between single-investigator studies and large teams. (500 words or less)
- What education (including formal and informal), research, and training opportunities—for students, postdoctoral researchers, and mid-career scientists—are needed? Opportunities might include interdisciplinary, teambased, or other innovative, value-added strategies for realizing higher levels of depth and breadth at the individual level, and/or expansion of the current environmental research community through inclusion of currently underrepresented groups. (500 words or less)
- Beyond economic competitiveness and national security, what other high priority drivers of environmental science and education need attention?
   (200 words or less)

Submissions must be received by 5:00 p.m. Eastern Time on August 20, 2018. Respondents may edit their responses while completing the survey, but will not be able to save work in progress to complete later. Respondents will see a confirmation screen upon successful submission responses.

The committee and associated staff will read and analyze all responses received, and use them, in addition to its own background work, to develop a report on these topics to inform NSF and the community. It intends to publish this report by the end of 2018.

The AC ERE also anticipates making submissions publicly accessible through its website (https://www.nsf.gov/ere/ereweb/advisory.jsp). Authors who do not wish to have their full responses posted online may restrict access to the AC ERE and associated staff. However,