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Area of Expertise

The focus of my research has two broad aims.

The first aim is to screen compounds that will attenuate the subjective and reinforcing effects of abused drugs as part of a NIDA-funded contract searching for effective treatment drugs for addiction to cocaine, methamphetamine, nicotine, and marijuana.

The second aim is to evaluate the potential abuse liability of novel designer drugs that are increasingly available as "legal" alternatives to controlled substances. We use drug discrimination procedures which assess the subjective effects of common drugs of abuse such as cocaine, methamphetamine, nicotine, and marijuana, with designer drugs like MDMA (Ecstasy), with opioids like morphine, or with hallucinogens like LSD. We also test the reinforcing/rewarding effects of drugs using the conditioned place preference and self-administration assays.

Qualifications

BA in Behavioral Science, The University of Chicago

MA in Behavior Science, University of Houston

PhD in Psychology, Utah State University

Recent Publications

Comparison of locomotor stimulant and drug discrimination effects of four synthetic cathinones to commonly abused psychostimulants

Shetty, R. A., Hoch, A. C., Sumien, N., Forster, M. J. & Gatch, M. B., 2023, (Accepted/In press) In: Journal of Psychopharmacology.

Behavioral pharmacology of five novel synthetic cannabinoids

Gatch, M. B., Tourigny, A., Shetty, R. A. & Forster, M. J., 1 Apr 2022, In: Behavioural pharmacology. 33, 23, p. 175-183 9 p.

Behavioral effects of four novel synthetic cathinone analogs in rodents

Gatch, M. B., Shetty, R. A., Sumien, N. & Forster, M. J., Jul 2021, In: Addiction Biology. 26, 4, e12987.

Discriminative Stimulus Effects of Substituted Tryptamines in Rats

Gatch, M. B., Hoch, A. & Carbonaro, T. M., 9 Apr 2021, In: ACS Pharmacology and Translational Science. 4, 2, p. 467-471 5 p.

Carisoprodol pharmacokinetics and distribution in the nucleus accumbens correlates with behavioral effects in rats independent from its metabolism to meprobamate

Carbonaro, T. M., Nguyen, V., Forster, M. J., Gatch, M. B. & Prokai, L., 1 Sep 2020, In: Neuropharmacology. 174, 108152.

Methylenedioxymethamphetamine-like discriminative stimulus effects of pyrrolidiny cathinones in rats

Gatch, M. B. & Forster, M. J., 1 Jul 2020, In: Journal of Psychopharmacology. 34, 7, p. 778-785 8 p.

Methylenedioxymethamphetamine-like discriminative stimulus effects of seven cathinones in rats

Gatch, M. B., Dolan, S. B. & Forster, M. J., 2020, In: Behavioural pharmacology. 31, 4, p. 378-384 7 p.

Locomotor activity and discriminative stimulus effects of five novel synthetic cathinone analogs in mice and rats

Gatch, M. B., Dolan, S. B. & Forster, M. J., 1 Jun 2019, In: Drug and Alcohol Dependence. 199, p. 50-58 9 p.

Cannabinoid-like effects of five novel carboxamide synthetic cannabinoids
Gatch, M. B. & Forster, M. J., Jan 2019, In: NeuroToxicology. 70, p. 72-79 8 p.

Characterization of the neurochemical and behavioral effects of solriamfetol (JZP-110), a selective dopamine and norepinephrine reuptake inhibitor
Baladi, M. G., Forster, M. J., Gatch, M. B., Mailman, R. B., Hyman, D. L., Carter, L. P. & Janowsky, A., Aug 2018, In: Journal of Pharmacology and Experimental Therapeutics. 366, 2, p. 367-376 10 p.

Sponsored Projects

Evaluation of Six Synthetic Tryptamines

Gatch, M. & Forster, M.
US Department of Justice
1/09/18 → 28/02/19

Evaluation of Synthetic Opioid Substances using the Drug Discrimination Assay

Gatch, M. & Forster, M.
US Department of Justice
1/08/17 → 31/07/18

Evaluation of Synthetic Opioid Substances using the Drug Discrimination Assay

Gatch, M. & Forster, M.
US Department of Justice
1/09/18 → 31/08/19

Mechanisms of Carisoprodol Abuse

Forster, M. & Gatch, M.
West Virginia University Research Corp
1/02/12 → 31/05/14

Rodent Testing to Identify Pharmacotherapies for Substance Dependence

Forster, M. & Gatch, M.
NIDA: National Institute on Drug Abuse
31/12/12 → 3/01/18

Rodent Testing to Identify Pharmacotherapies for Substance Dependence

Forster, M. & Gatch, M.
NIDA: National Institute on Drug Abuse
4/01/16 → 20/09/18

Using rodent behavioral models to identify substance abuse pharmacotherapies

Forster, M., Gatch, M., Sumien, N. & Shetty, R.
NIDA: National Institute on Drug Abuse
20/09/18 → 3/01/23