

Next generation electronic monitoring of parolees in development

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For people on probation and parole and those who work with them, electronic monitoring can be a useful tool to ensure they are making curfew or determining when they are in places they should not be.

What electronic monitoring doesn't do well is provide offenders with positive support to meet the conditions of their probation or parole so that they avoid violations and the resulting jail time, said April Pattavina, an associate professor in UMass Lowell's School of Criminology and Justice Studies.

Pattavina - in conjunction with Computer Science Prof. Guanling Chen and Ron Corbett, who teaches in the School of Criminology and Justice Studies - is working to change that by developing the next generation of [electronic monitoring](#), using smartphones and sensor technology along with GPS tracking to promote and reward constructive behaviors that can keep probationers on track and out of jail.

"We're looking at different ways we could promote positive behavior, like reminding probationers about treatment appointments and job opportunities and then sending them positive reinforcement messages when they follow through," Pattavina said.

Pattavina and her team have won a \$99,000 National Science Foundation planning grant for what they call BEACON (Behavioral Economics Application with Correctional Opportunities Notification). The research is building on studies that show rewarding positive actions can bolster

success on probation by promoting behavior change rather than simply focusing on negative behavior and punishment.

The researchers say police, prosecutors, judges and probation officers recognize that many people caught up in the [criminal justice](#) system are dealing with mental illness, addiction, poverty, homelessness, lack of education and other problems that make it hard for them to meet all the conditions of probation.

Researchers will interview ex-offenders who have completed probation about what helped them succeed. They will also interview practitioners - police, [probation officers](#) and [substance abuse](#) treatment professionals - to figure out which strategies make the most sense to pursue.

Chen and his graduate students will figure out how to incorporate those strategies into a smartphone app or suite of apps, leveraging existing GPS functionality and emerging technologies.

"Think of it as a personal coach, like a weight-loss program, to keep probationers motivated and accountable," Chen said.

Monitoring capabilities that make use of sensing technology could also provide information about changes in behavior that indicate a probationer is at risk of violating probation conditions. This approach provides opportunities to identify those at risk of recidivism or relapse for the purpose of prevention rather than just control.

"With smartphones, we can know about the details of their behavior and when routine patterns change," Chen said. "But it's not just about surveillance. We may be able to incorporate prediction capabilities. For example, we can use algorithms to analyze movement and sleep patterns, along with cyber-activities, that could signal possible substance abuse or [mental health problems](#). Case managers can then be alerted to provide an

early intervention."

The team's primary goal is to divert those under community supervision before they get stuck in a cycle of crime, incarceration and recidivism. BEACON has the potential to make communities safer and decrease correctional costs while helping address the issues that got the probationers into trouble in the first place, Pattavina believes.

Long-term, BEACON could provide a wealth of data, such as what services probationers use most frequently and which communities are in need of more resources. That syncs with the NSF grant program funding the work, which is part of nationwide push for criminal justice reforms based on research evidence.

Provided by University of Massachusetts Lowell

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