

## Benefits of predictive analytics

Data science and machine learning can bring a host of benefits to the public sector, including:

- Better understanding of data and the needs of the population
- Better targeting of resources in times of increased demand
- More effective and timely intervention
- Using historical data to identify trends
- Providing scientific evidence to support human decision making

## The Risk Stratification Team

Is led by:

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And supported by the expertise of:

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University of Essex

# catalyst

A LOCAL PARTNERSHIP IMPROVING  
COMMUNITY SERVICES

## CATALYST PROJECT RISK STRATIFICATION TEAM

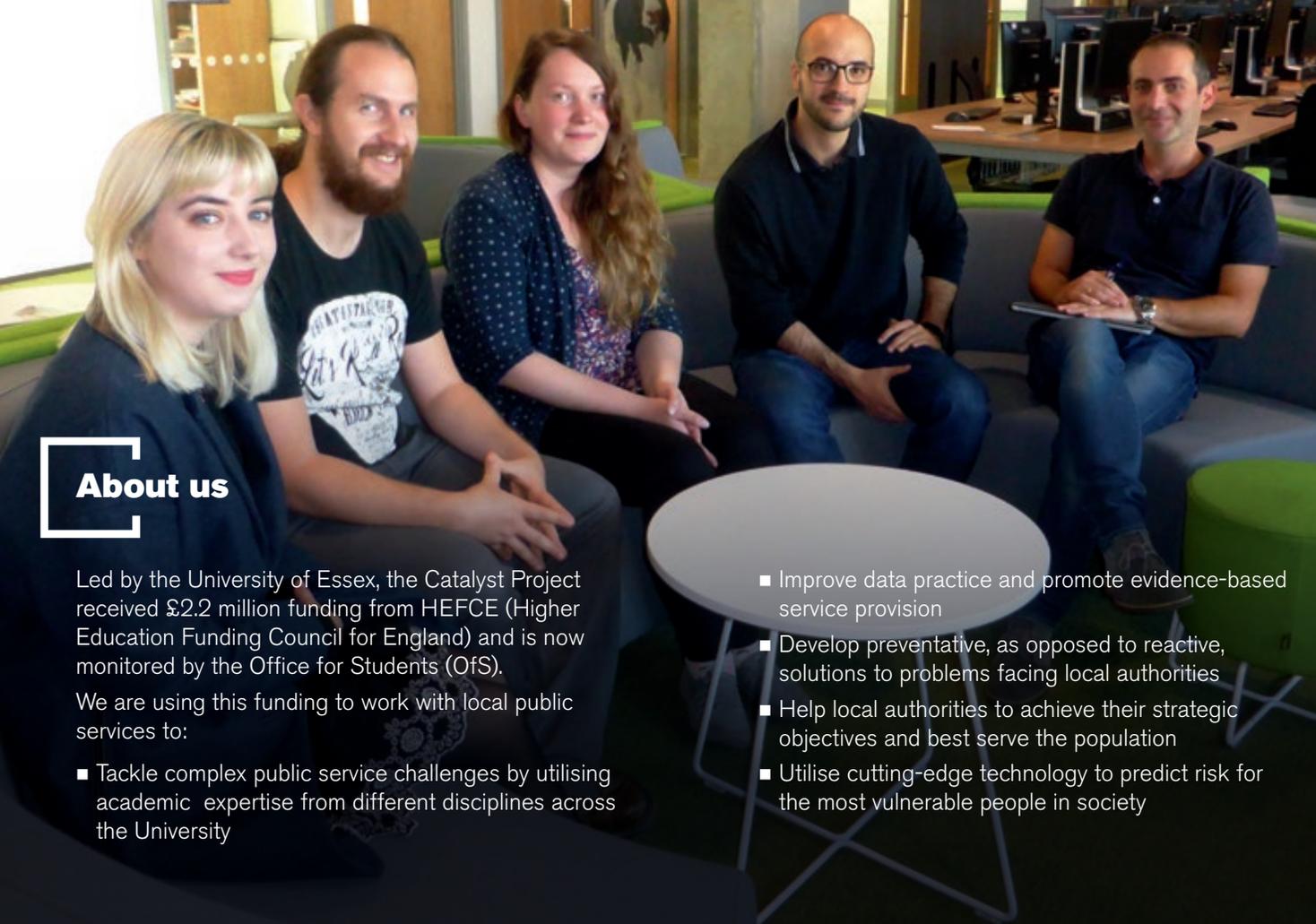
Experts in creating predictive analytical tools to enhance public service outcomes

University of Essex working in partnership with:



**ESSEX  
PARTNERS**





## About us

Led by the University of Essex, the Catalyst Project received £2.2 million funding from HEFCE (Higher Education Funding Council for England) and is now monitored by the Office for Students (OfS).

We are using this funding to work with local public services to:

- Tackle complex public service challenges by utilising academic expertise from different disciplines across the University

- Improve data practice and promote evidence-based service provision
- Develop preventative, as opposed to reactive, solutions to problems facing local authorities
- Help local authorities to achieve their strategic objectives and best serve the population
- Utilise cutting-edge technology to predict risk for the most vulnerable people in society

## The work we do

Our team builds, tests, and applies novel analytical tools aimed at improving the targeting of service provision and use of fiscal resources, with the aim of generating an atmosphere conducive to the use of big data techniques.

Our academic expertise in data analytics and visualisation can help to uncover patterns and offer innovative predictive insight to help decision-making.

Once an area is identified for analysis, our work generally follows these steps:

- Objectives are defined and datasets identified
- Data is extracted and anonymised, and formal sharing agreements put in place
- Data is cleaned and merged by our analysts
- Several iterations of analysis are performed
- Findings are discussed and refined
- A final report is produced for our clients and outputs are implemented into their systems
- Training and formal hand over take place
- A scientific journal article is written to inform the academic community.

## Project examples

### School readiness

We have helped Essex Partners to use their data to identify children at low, medium and high risk of not being ready for school. Using the random forests method, we have implemented an algorithm into their existing software platform. The output from this is used to supplement their existing expertise and enable targeted interventions in the community.

### Children at risk of entering care

An initiative is currently in progress with Suffolk County Council to identify children at risk of entering care. We have used predictive modelling and natural language processing to analyse a large amount of data and are working to refine this to produce results of optimum accuracy and utility.

### MASH (Multi-Agency Safeguarding Hub)

We are working alongside MASH in Suffolk to apply advanced machine learning techniques to their data. The aim is to streamline the time consuming processing of this data, decrease the number of false-negatives, and ultimately help more people in need, at a faster rate.