Intelligent Turf Limited, based in Preston, aims to encourage turfgrass professionals to embrace the concept of precision turfgrass management (PTM) through the capture, analysis and visualisation of objective plant and soil data. PTM is an information-based approach to managing turfgrass sites such as golf courses and football pitches.

**The Challenge**

Precision turfgrass management integrates the use of historical site data along with objective data obtained from a number of plant and soil sensors, mobile sensor platforms, Global Positioning System (GPS) and Geographical Information Systems (GIS) technology. This data is collated together to enable a more accurate assessment of the need to apply inputs (e.g. water, nutrients and other materials) to turfgrass sites, and apply other management operations such as cultivation.

The company wanted support to produce a flexible GIS database with the potential for future development, to capture, visualise and analyse temporal and spatial data, and to produce a report summarising the development and application of the database.

**Skills Sought**

- Experience of programming and developing databases
- Motivated and able to work independently
- Experience of handling spatial data
- Knowledge of soil/water attributes e.g. nutrients, drainage
- Ability to summarise and synthesis data and produce reports
- Experience of using GIS/image processing software

**The Solution**

Laura Waterson, Geography, and Alex Briggs, Geography and Biology, were recruited through the Science and Technology Internship Programme for a twelve week internship with Intelligent Turf. They developed the GIS database into a hub for the analysis and visualisation of data. The golf course and natural turf pitches at Myerscough College were used as the main research site.

**Cost**

The internship was part financed by Intelligent Turf Limited at £1,500 + VAT, and part financed by Santander, with a total estimated value £9,120.

**Impact**

The database allowed the various layers of data such as aerial images, rootzone composition, pH and nutrients, moisture content and turfgrass vigour relating to the site to be displayed and viewed. It also enabled the businesses to view changes over time to, for example, specific turfgrass management practices and how they may show an improvement, decline or no change to the vigour of the turfgrass.

The interns helped the business to move forward and develop rapidly to a product and service which is being used at golf courses and stadia. Both interns were given full time employment.

[www.lancaster.ac.uk/sci-tech/internships](http://www.lancaster.ac.uk/sci-tech/internships)
Intern Feedback

“We would like to take the opportunity to thank all parties for allowing us to work within a new and exciting business which has progressively developed from research through to the creation of a commercial product over the time of our internship.

“We recognised the merits of taking part in an internship as it gave us valuable work experience within the field of GIS and remote sensing. Our decision allowed us to dip our toes into GIS in the real world without tying us to the industry.

“We both developed as individuals, finding areas within the business which complemented our interests and knowledge. Working for prolonged periods with the GIS software has improved our understanding of the software. We have helped Owen and his business to move forward and develop rapidly to a product and service which is being used at golf courses and stadia.

“Alex and I are now employed full time by Intelligent Turf which without the cooperation of all individuals involved with the internship programme would not have been possible.”

Laura Waterson,
Geography

Benefits

- Developed a prototype product for the turf industry
- Created a number of USP’s including allowing turf professionals to capture their own objective data on-the-go and being able to view the results within 60 minutes of receiving the data, as opposed to the current industry standard of 10 days
- Both interns gained full time employment with Intelligent Turf and 1 job was safeguarded
- Collated existing data into more useable format for analysis to aid turf managers with decision making
- Provided the opportunity to view changes in turf over time and answer the questions is the turf, improving, declining or staying the same
- Expanded the client base
- Anticipated improvement in business performance leading to a 10% GVA improvement over 3 years

Company Feedback

“We benefited by the creation of two new products. We found the internship programme very useful and the support offered through the process very helpful.”
Owen Mullen, Director, Intelligent Turf Limited. www.intelligentturf.com

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Pam Pickles,
Student Employability Manager.

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