

## ***IGRM 2016 - Programme***

**Friday 19<sup>th</sup> February**

**Venue: Ryan Institute Annexe Lecture Theatre (MRA201)**

### ***In the midst of wonders: Windows into Earth's History***

A special symposium to honour the life and work of **Prof Mike Williams**.

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|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>14.00 – 14.30</b> | <b>From sand grains to plates: an ongoing geological saga from Finnmark, Arctic Norway</b><br><br>Stephen Daly (UCD)                                       |
| <b>14.30 – 15.00</b> | <b>The important thing is not to stop questioning: Mike Williams's contributions to and impact on Irish Caledonian geology</b><br><br>Dave Harper (Durham) |
| <b>15.00 – 15.30</b> | <b>Late Palaeozoic Ice Age: Global importance and Irish insight.</b><br><br>Milo Barham (Curtin University)                                                |
| <hr/>                |                                                                                                                                                            |
| <b>15.30 – 16.00</b> | <i>Tea and Coffee Break</i>                                                                                                                                |
| <hr/>                |                                                                                                                                                            |
| <b>16.00 – 16.30</b> | <b>The search for Tertiary sediments in Ireland.</b><br><br>Pete Coxon (TCD)                                                                               |
| <b>16.30 – 17.00</b> | <b>The Professor, the pebble and me: a Pleistocene tale from the Irish Shelf.</b><br><br>Bill Wood (Extreme Iceland)                                       |
| <b>17.00 – 17.30</b> | <b>Submerged Holocene forests from the West of Ireland</b><br><br>Eamon Doyle (Burren GeoPark)                                                             |
| <b>17.30</b>         | <b>Presentation to Mike's Family</b>                                                                                                                       |

## Friday 19<sup>th</sup> February (continued)

**Venue:** O'Flaherty Lecture; Arts-Science Concourse

**18.00** Registration desk opens

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**19.00 – 20.15** The William King Annual Lecture

**“Mysteries of our newest extinct relative: *Homo naledi* and the Rising Star Cave”**

*Dr Tracey Kivell* (University of Kent)

*Sponsored by the School of Natural Sciences*

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**Venue:** Staff Social Club and James Mitchell Museum,  
Quadrangle Building

**20.15 – 22.00** Icebreaker reception

*Sponsored by Tullow Oil*

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**Saturday 20<sup>th</sup> February**

**Venue: O'Flaherty Lecture Theatre, Arts-Science Concourse**

- 08.50 - 09.00**      **Welcome Address**
- 09.00 - 09.15**      **Imaging hydrothermal systems at Furnas caldera (Azores, Portugal): Insights from Audiomagnetotelluric (AMT) data.**  
*Colin Hogg, Duygu Kiyani and Volker Rath*
- 09.15 - 09.30**      **The seismicity of Ireland**  
*Pierre Arroucau, James Grannell, Sergei Lebedev, Chris Bean, Clare Horan, Tom Blake*
- 09.30 - 09.45**      **Ocean model LSOMG: Development and applications**  
*Libor Sachl, Zdenek Martinec and David Einspigel*
- 09.45 - 10.00**      **Global ocean tide modelling**  
*David Einspigel and Zdenek Martinec*
- 10.00 - 10.15**      **An Analysis of the Generation Mechanisms of Microseisms in the Northeast Atlantic Ocean**  
*Sarah Donne, Chris Bean, David Craig, Frederic Dias, Paul Christodoulides*
- 10.15 - 10.30**      **EMODnet - Resilience Mapping of Irish Coast**  
*Cathal Jordan*
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- 10.30 - 11.00**      **Tea and Coffee Break**  
  
*Sponsored by **Providence Resources***
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- 11.00 - 11.15**      **Sunny, Rain Later: 25 years of the Carnian Pluvial Episode.**  
*Michael J. Simms and Alastair Ruffell*
- 11.15 - 11.30**      **Developing constrained geochemical data to analyse environmental change from deposited sediments: an example from the West Bengal Sundarbans, India**  
*Rory P. Flood, M.R. Bloemasma, G.J. Weltje, S.M. O'Rourke, I.D. Barr, J.D. Orford and J.N. Turner*
- 11.30 - 11.45**      **A provenance study of ancient sedimentary basins of southern Ireland: insights from detrital zircon U-Pb ages.**  
*Brenton Fairey, Kerrison A., Meere, P., Mulchrone K., Linnemann U., Hofmann M., Gärtner A, Sonntag B. and Byrne K.*
- 11.45 - 12.00**      **Establishing the provenance of Lower Cretaceous Sandstones, offshore western Ireland**  
*Aron Barry, Shane Tyrrell, Andrew Morton and Paula Robinson*

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- 12.00 - 12.15**      **Pb isotopes and the Highland Boundary in Scotland – a look back**  
*Peter Haughton and Shane Tyrrell*
- 12.15 - 12.30**      **Quantitative Characterization of Sedimentary Grains**  
*Mohit Tunwal, Mulchrone, K.F. and Meere, P.A.*
- 12.30 - 12.45**      **Prediction of upslope stratigraphic-pinchout traps in turbidite systems using a particle suspension model**  
*Lawrence Amy and Robert Dorrell*
- 12.45 - 13.00**      **Compression-based modelling of hierarchical deep-marine sedimentological architectures.**  
*Tom Manzocchi, L. Zhang, D. A. Walsh and K. Soni*
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- 13.00 - 13.45**      **Lunch**  
*Tea and Coffee sponsored by **Providence Resources***
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- 13.45 - 14.00**      **LA-ICP-MS mineral maps unveil magma invasion beneath Mount Etna**  
*Teresa Ubide*
- 14.00 - 14.15**      **2D Chemical Visualisations of Neoproterozoic Little Dal Group Polymud Fabrics and Spongiform Structures**  
*Meabh Gallagher, Balz Kamber, Elizabeth Turner and Fritz Neuweiler*
- 14.15 - 14.30**      **The Geothermal Energy Potential of The Galway Granite Batholith**  
*Tom F. Farrell, M. R. Muller, V. Rath, M. Feely, J. Vozar, J. Fullea and C. Hogg*
- 14.30 - 14.45**      **Forming rare element pegmatites: the example of the Leinster Granite and associated lithium pegmatites in southeast Ireland**  
*Renata Barros, Julian F. Menuge and Thomas Zack*
- 14.45 - 15.00**      **Differentiated impact melt sheets may be a potential source of Hadean detrital zircon**  
*Gavin G. Kenny, Martin J. Whitehouse, and Balz S. Kamber*
- 15.00 - 15.15**      **Developing geochronology by LA-ICPMS imaging: Applications of U-Pb calcite dating in the geosciences**  
*David Chew*
- 
- 15.15 - 15.45**      **Tea and Coffee Break**  
*Sponsored by **Providence Resources***

- 15.45 - 16.00**      **Utilising INFOMAR Data in a Research Capacity**  
*Aileen Bohan and Maria T. Judge*
- 16.00 - 16.15**      **Multifrequency imaging and quantification of shallow gas in marine sediments**  
*Zsuzsanna Toth, Volkhard Spiess and Hanno Keil*
- 16.15 - 16.30**      **Hydrodynamic and Sedimentological Influences on Cold-Water Coral Reef Development: the western Moira Mounds, Porcupine Seabight, NE Atlantic**  
*Aaron Lim, A. J. Wheeler, A. Vertino, S. Spezzaferri, V.A.I. Huvenne and H. de Haas*
- 16.30 - 16.45**      **The potential and challenges of cold water corals as proxies for environmental change**  
*Quentin Crowley, Vincent Mouchi, Linda Dämmer, Kevin Power, Andy Wheeler, Frank McDermott, Aggie Georgiopolou and Dominique Blamart*
- 16.45 - 17.00**      **“Stick ‘n’ peel”: explaining unusual patterns of disarticulation and loss of completeness in fossil vertebrates.**  
  
*Patrick J. Orr, Laetitia B. Adler, Susan R. Beardmore, Heinz Furrer, Maria E. McNamara, Enrique Peñalver-Mollá and Ragna Redelstorff*
- 17.00 - 17.15**      **The significance of the Portrane brachiopod fauna (Upper Ordovician), County Dublin, Ireland**  
*David A.T. Harper and L. Robin. M. Cocks*
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- 17.15 - 18.30**      **Dedicated Poster Session**  
  
*Sponsored by the **Petroleum Affairs Division (PAD)** and the **Petroleum Infrastructure Programme (PIP)***
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- 18.30 - 19.45**      **IGRM Invited Guest Lecture**  
  
**“The geological adventures of Curiosity in Gale crater, Mars”**  
  
*Prof Sanjeev Gupta (Imperial College London)*  
  
*Co- sponsored by the **Geological Survey of Ireland (GSI)** and the **Geological Survey of Northern Ireland (GSNI)***
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- 20.15 - late**      **Conference dinner at the Meyrick Hotel, Eyre Square**
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**Sunday 21<sup>st</sup> February**

**Venue: O'Flaherty Lecture Theatre, Arts-Science Concourse**

- 09.00 - 09.15**      **Importance of pre-existing fault size for the evolution of an inverted fault system**  
*Cathal Reilly, Andrew Nicol and John J. Walsh*
- 09.15 - 09.30**      **A quantitative model of the structure of fault zones**  
*Conrad Childs, Tom Manzocchi, Aisling Soden, John Walsh and Efstratios Delogkos*
- 09.30 - 09.45**      **The structure of the south-central Taiwan thrust belt**  
*Giovanni Camanni, Dennis Brown, Joaquina Alvarez-Marron and Yih-Min Wu*
- 09.45 - 10.00**      **Throw distribution along normal fault zones in the Ptolemais Basin, Greece**  
*Efstratios Delogkos, Tom Manzocchi, Conrad Childs, John J. Walsh and Spyros Pavlides*
- 10.00 - 10.15**      **An Investigation into Fault Controls on Submarine Channel Development in the Parihaka Basin, New Zealand**  
*Aisling M. Scully, Tiago M. Alves, Patrick A. Meere*
- 10.15 - 10.30**      **Structural style in the Timor Sea: a possible analogue for the offshore west Ireland**  
*Muhammad Mudasar Sagab and Julien Bourget*
- 10.30 - 10.45**      **Deep crustal structure of the Porcupine Basin from seismic refraction data modelling**  
*Manel Prada, Louise Watremez, Chen Chen, Brian O'Reilly, Tim Minshall, Tim Reston, Gerlind Wagner, Viola Gaw, Dirk Kläschen and Patrick Shannon*

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**10.45 - 11.15**      **Tea and Coffee Break**  
*Sponsored by **Providence Resources***

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- 11.15 - 11.30**      **Actively forming Kuroko-type VMS mineralization at Iheya North, Okinawa Trough, Japan: new geochemical, petrographic and  $\delta^{34}\text{S}$  isotope results**  
*Christopher Yeats, Steven Hollis, Crystal LaFlamme<sup>4</sup>, Angela Halfpenny, Marco Fiorentini, Juan-Carlos Corona, Gordon Southam, Richard Herrington and John Spratt*
- 11.30 - 11.45**      **Constraining chromitite formation through *in situ* geochemical analyses: A Study of the UG2 unit, Bushveld Complex, South Africa**  
*Maurice Brodbeck, Ilka Kleinhanns, Ronny Schönberg, Thomas Wenzel*

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- 11.45 - 12.00**      **Formation of hydrotalcite coating on Al alloy 6010 in a spray system**  
*Lingli Zhou, Henrik Friis, Melanie Roefzaad, Kasper Bondo Hansen, Nikolaj Zangenberg and Sara Eisenhardt*
- 12.00 - 12.15**      **Genesis and Structural Architecture of the CSA Cu-Ag Mine, Cobar, NSW, Australia**  
*Roisin Kyne, Ron Berry and Bruce Gemmell*
- 12.15 - 12.30**      **Origin and evolution of the Mesoarchean Aouéouat greenstone belt and associated gold mineralisation**  
*Kyle Heron, Quentin G. Crowley and Keith Benn*
- 12.30 - 12.45**      **Petrogenetic constraints on Ordovician terrane accretion and Late Caledonian granite genesis in Ireland and the Isle of Man**  
*Tobias Fritschle, J. Stephen Daly, Martin J. Whitehouse, Brian McConnell and Stephan Buhre*
- 12.45 - 13.00**      **The basement geology of the Porcupine High; new samples and new relationships?**  
*Kerrymin Sun, Tyrrell, S., Chew, D., Daly, S. and Cogné, N.*
- 13.00 - 13.15**      **Early Cenozoic exhumation around the Irish Sea**  
*Nathan Cogné, Daniel Döpke and David M. Chew*
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- 13.15 - 14.00**      **Lunch**  
*Tea and Coffee sponsored by **Providence Resources***
- 
- 14.00 - 14.15**      **Investigating the provenance of thermal groundwater in the Dublin Basin using compositional multivariate statistical analysis: a hydrogeochemical study**  
*Sarah Blake, Tiernan Henry, John Murray, Rory Flood, Mark R. Muller, Ian G. Jones, Volker Rath*
- 14.15 - 14.30**      **Groundwater time lag: Implications for nitrate removal in two agricultural river catchments.**  
*Eoin McAleer, Catherine Coxon, Karl G. Richards, M. M. R Jahangir and Per Erik Mellander*
- 14.30 - 14.45**      **The impact and magnitude of industrial emissions in Ireland recorded by an ombotrophic peat bog.**  
*Carolina Rosca, Emma L. Tomlinson, Balz S. Kamber, Alice Farrelly and Cora A. McKenna*
- 14.45 - 15.00**      **An All-Ireland Quaternary Map**  
*Sam Roberson, Xavier Pellicer, Mike Sheehy and Mark Cooper*

**15.00 - 15.15**      **Early onset of Dansgaard-Oeschger warming events in Northern Hemisphere Last Glacial speleothems: asynchronous warming or missing Greenland ice layers?**  
*Frank McDermott*

**15.15 - 15.30**      **Tellus to bring baseline geochemical and geophysical surveying nationwide**  
*Ray Scanlon, Mairéad Glennon, James Hodgson, Kate Knights, Peter Heath, Mohammednur Ture Desissa, Vincent Gallagher, Emma Scanlon, Judith Mather and Aileen Doran*

**15.30 - 15.45**      **Underground geology and hydrology in the Burren**  
*Colin Bunce*

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**15.45 - 16.00**      **Closing remarks and student prizes**



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## ***Listing of Poster Presentations***

*(In alphabetical order by first author)*

### **Surface-wave tomography of Ireland and surroundings**

*Raffaele Bonadio, Pierre Arroucau, Sergei Lebedev, Thomas Meier, Andrew J. Schaeffer, Andrea Licciardi and Nicola Piana Agostinetti*

### **Geoelectrical characterisation of the Loop Head Peninsula subsurface: implications for onshore carbon sequestration.**

*Joan Campanyà, Xènia Ogaya, Alan G. Jones, Volker Rath, Brian McConnell, Peter D.W. Haughton and Juanjo Ledo*

### **Waveform Tomography of the North Atlantic Region**

*Nicolas Celli, Sergei Lebedev, Andrew Schaeffer and Carmen Gaina*

### **Identifying the Great Oxidation Event in Wyoming**

*T. Jake R. Ciborowski and Joseph W. Orme*

### **Fluid inclusion characterization in evaporite deposits from the Crotone basin, Calabria, South Italy**

*Cipriani, M. Costanzo, A., Dominici, R. and Feely, M.*

### **Deciphering stable isotope variability across a Cambro-Ordovician carbonate platform**

*Stephen P. Coakley, David A. Fike, Matthew Newville, Catherine V. Rose*

### **Coverage and Growth of the National Geotechnical Borehole Database**

*Kim Cody, Beatriz Mozo and Brian McConnell*

### **Evidence for pulsed magma injection into the Portrush Sill Complex, Northern Ireland**

*M. R. Cooper and D. Doherty*

### **Validation of a frequency-dependent sound propagation model using spectral analysis of observed data from the Porcupine Basin.**

*S. Crawford, C. Brown, E. McKeown, F. Stapleton, A. Duncan, R. McCauley and M. White*

### **Saved for the Nation: UCD's Mineral Collection Acquired by the National Museum of Ireland.**

*Cullen, M.L., Dillon, N., Dunne, L., O'Brien, I., Pelton, A, Yanay, R., Parkes, M.A and Roycroft, P.D.*

### **Geohazards of warm climates: Reconstructing past Irish storms during the Holocene Thermal Maximum.**

*Michelle Curran, Audrey Morley and Yair Rosenthal*

**Variability of the Continental Slope Current in the Rockall Trough**

*Eoghan Daly*

**Sedimentation and Seabed Erosion in the Wicklow Trough: A Seabed Mapping Approach**

*Divilly, M.*

**Geogenic radon risk mapping in Ireland**

*A. Doran, J. Hodgson, M. Glennon and R. Scanlon*

**Towards integrated, lithosphere-scale modelling of the thermal structure and evolution of basins**

*Javier Fullera, Sergei Lebedev*

**Natural and man-made event detection and discrimination in Ireland**

*James Grannell, Pierre Arroucau, Sergei Lebedev, Chris Bean, Clare Horan and Tom Blake*

**Geochemical and hyperspectral halos associated with VHMS deposits of the Eastern Goldfields Superterrane, Western Australia: insights from the Nimbus, Teutonic Bore and King deposits**

*Steven P. Hollis, Paul Gillespie, Darryl Podmore, Tony Roache, Lena Hancock, Andrew Pumphrey, Christopher J. Yeats, Stephen J. Barnes and Stephen Wyche*

**The investigation of Hydrocarbon Prospective Basins in the Newfoundland and Labrador Offshore Massif using fluid inclusions studies and mineral liberation analysis**

*Martin Feely, Derek Wilton, Alessandra Costanzo, Catherine Breheny and Jon Hunt*

**Sediment mobility of maerl beds: Impact of currents, waves and storm events in Galway Bay, West of Ireland**

*Siddhi Joshi, Garret Duffy and Colin Brown*

**Mapping Marine Minerals in Europe**

*Judge, M.T., McKeon, C., and O'Shea, G*

**Distortion effects on audio-magnetotelluric data investigated by 3-D modelling of high-resolution topography and bathymetry: Furnas Caldera, Azores Archipelago, Portugal**

*Duygu Kiyan, Volker Rath, and Colin Hogg*

**2D Quantitative imaging of a limestone reservoir by full waveform inversion of surface-based GPR measurements**

*François Lavoué, Guy Sénéchal, Stéphane Garambois and Jean Virieux*

**Ocean Bottom Seismometer (OBS) deployment in the shelf area offshore Donegal**

*Florian Le Pape, Chris Bean, David Craig, Sarah Donne, Clare Horan, Colin Hogg, Hannah McCann, Martin Möllhoff, Philippe Jousset, Henning Kirk and Aline Ploetz*

**The application of Copernicus satellite-borne remote sensors for monitoring coastal erosion and ecosystems in Ireland.**

*Daithí Maguire*

**Deposition and accumulation of microplastics and pollutants in marine sediments from the Irish Continental Shelf.**

*Jake Martin, Audrey Morley, Amy Lusher and Richard Thompson*

**A Front too Far; Insights from AMS and stain analysis in the Eastern Munster Basin**

*D.McCarthy, P.Meere and M. Petronis*

**Modelling Inception Horizons and their Influence on Groundwater Flow Pathways in a Karstic Catchment**

*T. McCormack, J. Vouillamoz, L.W. Gill and M. Lee*

**Constraining crustal contribution to the isotopic composition of the Antrim Lava Group, NE Ireland**

*C. McKenna, J.A. Gamble, P.R. Renne, R.M. Ellam, J.G. Fitton and P. Lyle*

**Geoelectrical studies in the NW Carboniferous Basin (Ireland) for testing new methodologies and assessing their potential for reservoir characterisation.**

*Xènia Ogaya, Joan Campanyà, Volker Rath, Alan G. Jones, Derek Reay, Rob Raine, Brian McConnell and Juanjo Ledo*

**Quaternary Geology map of the Cavan Lake District**

*X.M. Pellicer, M. Sheehy, K. Craven and V. Twomey*

**The palaeoenvironmental development of Cork Harbour through the Mid-Late Holocene.**

*Kevin Power, David Roig, Eileen Clarke and Andrew J Wheeler*

**Cold-Water Corals as archives of environmental change: the Porcupine Bank Canyon, NE Atlantic**

*Power, K., Wheeler, A.J. and Crowley, Q.*

**Stratigraphy of Viséan limestone in North Co. Cork**

*M. Pracht*

**Bayesian Inversion of long period surface-wave dispersion curves: an application to the inference of 1-D radially and azimuthally anisotropic regional structures of the Earth's crust and upper mantle**

*M. Ravenna and S. Lebedev*

**Structural analysis of Cenozoic inversion structures in the central part of the North Celtic Sea Basin, offshore Ireland.**

*P.Rodriguez-Salgado, C. Childs, P.M., Shannon and J.J. Walsh*

**Hierarchical characterisation and modelling of submarine channels**

*K. Soni and T. Manzocchi*

**Microplastics and heavy metals in *Nephrops* and their potential impact to the commercial market**

*Fatimatuj Zohara Sonny, Audrey Morley and Amy Lusher*

**Joint inversion modelling of geophysical data from Lough Neagh Basin**

*Jan Vozar, Max Moorkamp, Alan G. Jones, Volker Rath, Mark Müller and Derek Reay*

**The Reconstruction of Recent Landslides in the Killary Area, Co. Galway, Ireland.**

*Darren Wallace and Tiernan Henry*

**Reservoir modelling conditioned to seismic and well data**

*Deirdre Walsh and Tom Manzocchi*

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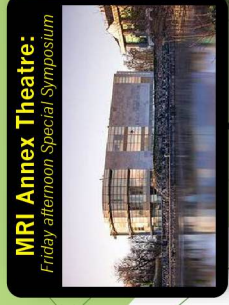
- 1 James Hardiman Library
- 2 Arts/Science Building
- 3 The Quadrangle
- 4 Arts Millennium Building
- 5 IT Building
- 6 Orbsen Building
- 7 Engineering Building
- 8 Aras na Gaelige
- 9 Aras na Mac Léinn and Bailey Allen Hall
- 10 Sports Centre
- 11 Corrib Village (Student Accommodation)
- 12 Aras Moyola
- 13 Bank of Ireland Theatre
- 14 J.E. Cairnes School of Business and Economics
- 15 Student Information Desk (SID)/Aras Uí Chathail

..... Accessible Route Across Campus (for the mobility impaired)

**Cafés, restaurants and bars**

- IA An Bhialann
- IB Smokey Joe's Café
- IC Coffee On Line
- ID College Bar
- IE Zinc Café
- IF Friars Restaurant

 Under Construction Please excuse our temporary appearance.



**CAMPUS MAP**



To Galway City

University road Entrance

NUI Galway  
O'É Gaillimh

Newcastle Road Entrance

St Anthony's Entrance

To Park & Ride and Dangan Sports Grounds

Cathedral  
River Corrib

UNIVERSITY ROAD  
NEWCASTLE ROAD

DISTILLERY ROAD

NEWCASTLE ROAD

BRIDGE

River Corrib

Accommodation