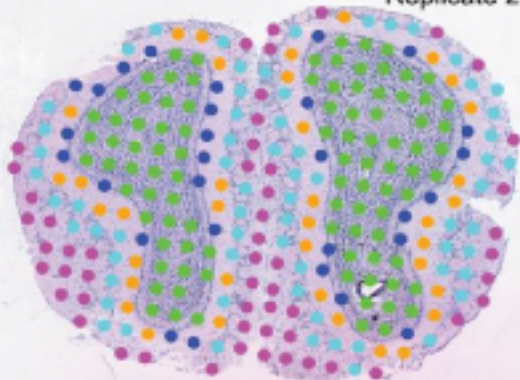
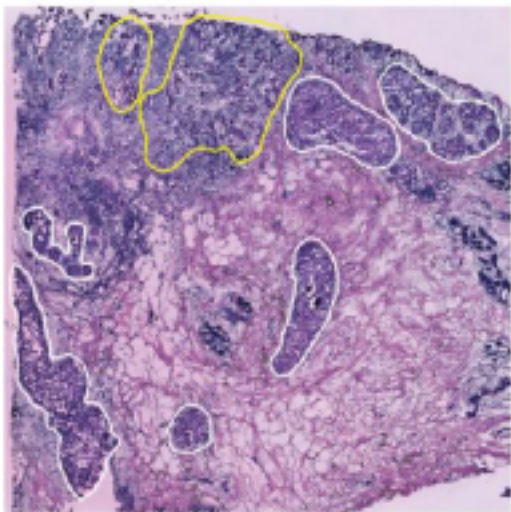
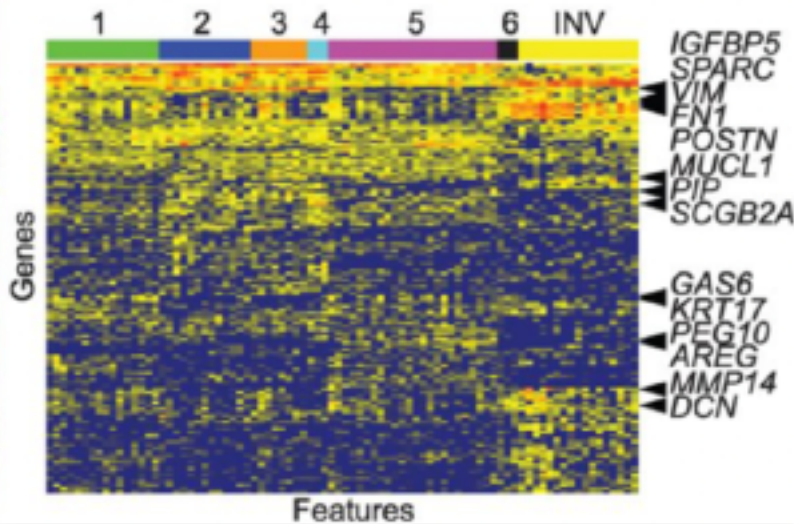
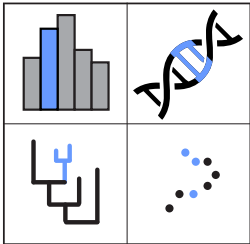


Replicate 2









gluegenes

Visualization and analysis of gene expression in tissue sections by spatial transcriptomics

Patrik L. Ståhl,^{1,2*} Fredrik Salmén,^{2*} Sanja Vickovic,^{2†} Anna Lundmark,^{2,3†} José Fernández Navarro,^{1,2} Jens Magnusson,¹ Stefania Giacomello,² Michaela Asp,² Jakub O. Westholm,⁴ Mikael Huss,⁴ Annelie Mollbrink,² Sten Linnarsson,⁵ Simone Codeluppi,^{5,6} Åke Borg,⁷ Fredrik Pontén,⁸ Paul Igor Costea,² Pelin Sahlén,² Jan Mulder,⁹ Olaf Bergmann,¹ Joakim Lundeberg,^{2‡} Jonas Frisén¹

Analysis of the pattern of proteins or messenger RNAs (mRNAs) in histological tissue sections is a cornerstone in biomedical research and diagnostics. This typically involves the visualization of a few proteins or expressed genes at a time. We have devised a strategy, which we call “spatial transcriptomics,” that allows visualization and quantitative analysis of the transcriptome with spatial resolution in individual tissue sections. By positioning histological sections on arrayed reverse transcription primers with unique positional barcodes, we demonstrate high-quality RNA-sequencing data with maintained two-dimensional positional information from the mouse brain and human breast cancer. Spatial transcriptomics provides quantitative gene expression data and visualization of the distribution of mRNAs within tissue sections and enables novel types of bioinformatics analyses, valuable in research and diagnostics.

“Instant” Spatial Transcriptomics...

Data Collection

Data


- chr3_3DGNOME
- ChIA-PET_Rep1_coverage_ENC...
- ChIA-PET_Rep1_loops_ENCFF3...
- ChIA-PET_Rep1_peaks_ENCFF...


Subsets

- Isolated Region

Plot Layers - Genome Track Viewer

- ☒ ChIA-PET_Rep1_loops_ENCFF310
- ☒ Isolated Region (ChIA-PET_Rep1_
- ☒ Isolated Region (ChIA-PET_Rep1_
- ☒ ChIA-PET_Rep1_coverage_ENCFF

color 


opacity 

Plot Options - Genome Track Viewer

Limits Axes Legend

Chrom

Range

Loops 

☐ Show Genes

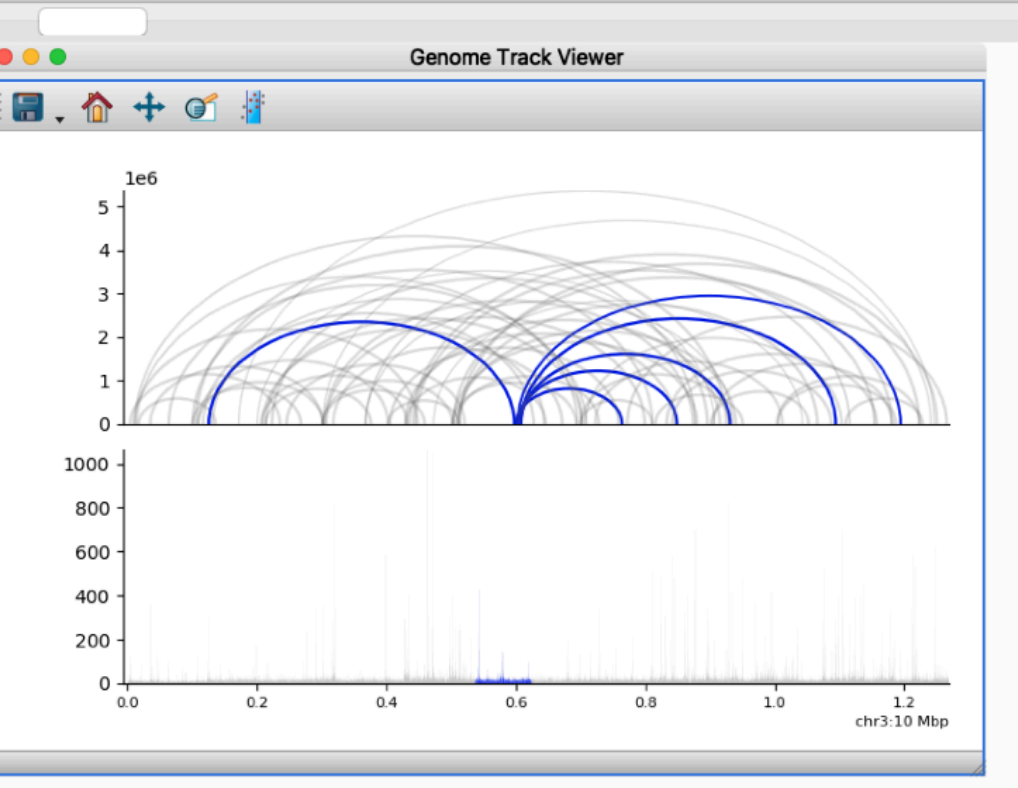
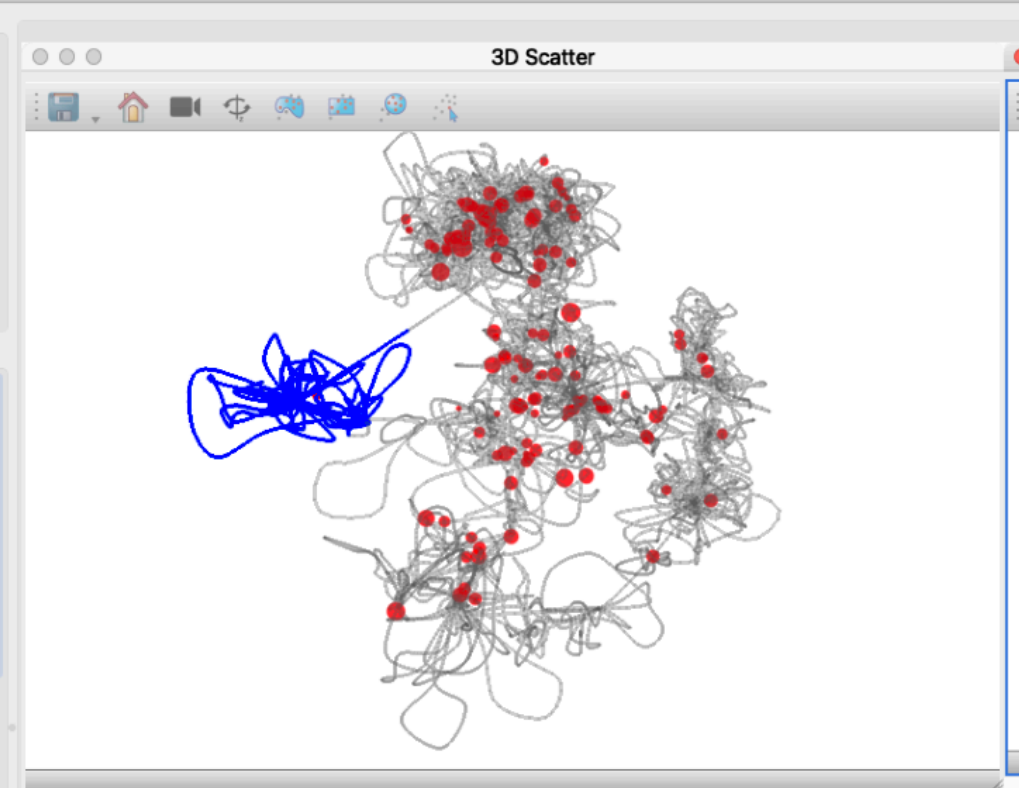
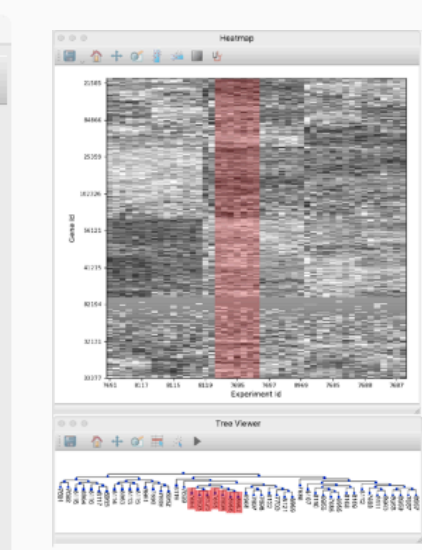


Table: ChIA-PET_Rep1_peaks_ENCFF578RML.chr3

	chr	end	start	peak_intensity	x	y
26	chr3	5027016	5026505	4.87089987...	-16.95555...	-20.22317..
27	chr3	5027804	5027264	4.79005547...	-15.96221...	-20.38275.
28	chr3	5058836	5057743	4.06550913...	-29.73126...	-18.92818..
29	chr3	5121954	5121471	3.4065460...	-12.510781...	-14.179771.
30	chr3	5122810	5122272	4.781716172...	-12.42688...	-10.85097.
31	chr3	5123968	5123002	3.9530344...	-12.511697...	-7.803144.
32	chr3	5137283	5136938	2.99992079...	-24.46438...	-5.097149.
33	chr3	5426373	5425735	3.2009293...	-41.73639...	33.330951
34	chr3	5427401	5426635	3.73743405...	-41.83707...	32.817504.
35	chr3	6994724	6994337	4.35688817...	9.6423483...	-7.427244.



Data Collection

Data

- 13co
- c18o
- 12co
- Orion_A_H_3x3[PRIMARY]
- megeath_tom_fix[J_AJ_144_192_table4]

Subsets

- Disks
- Protostars
- Protostars_at_HighAK
- Highest AK Protostar

Plot Layers - 1D Profile

<input type="checkbox"/>	Highest AK Protostar (12co)
<input type="checkbox"/>	Protostars_at_HighAK (12co)
<input type="checkbox"/>	Protostars (12co)
<input type="checkbox"/>	Disks (12co)
<input checked="" type="checkbox"/>	12co
<input type="checkbox"/>	Highest AK Protostar (c18o)
<input type="checkbox"/>	Protostars_at_HighAK (c18o)
<input type="checkbox"/>	Protostars (c18o)
<input type="checkbox"/>	Disks (c18o)
<input checked="" type="checkbox"/>	c18o
<input type="checkbox"/>	Highest AK Protostar (13co)

attribute PRIMARY

color

opacity

linewidth 1

Plot Options - 1D Profile

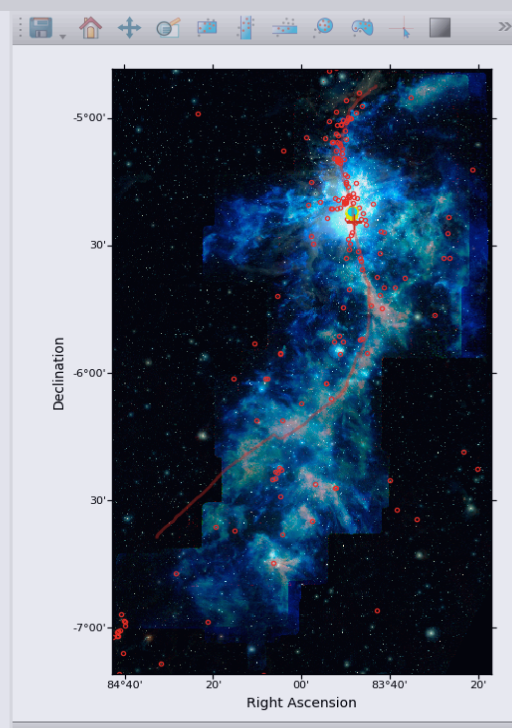
General Limits Axes

function Maximum

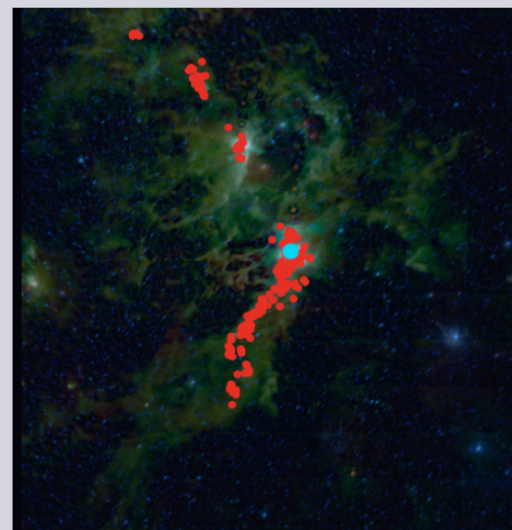
reference 13co

x axis Velocity

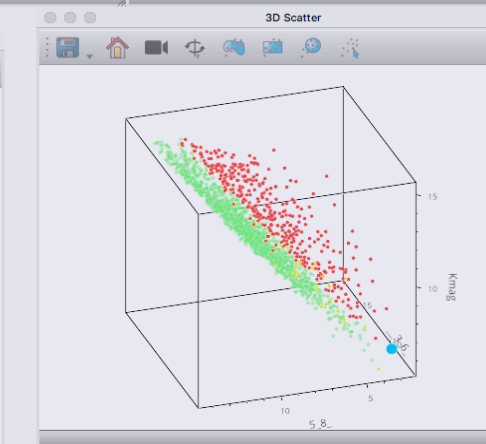
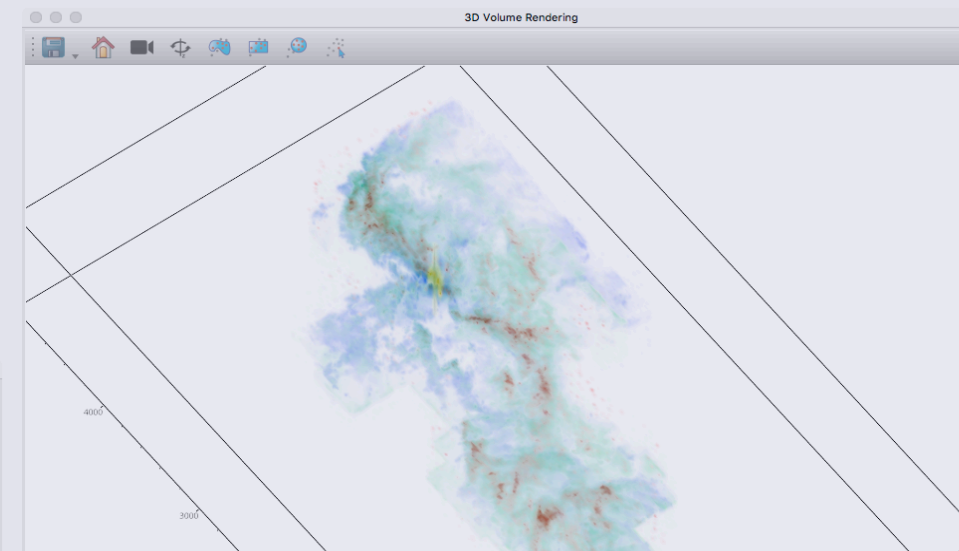
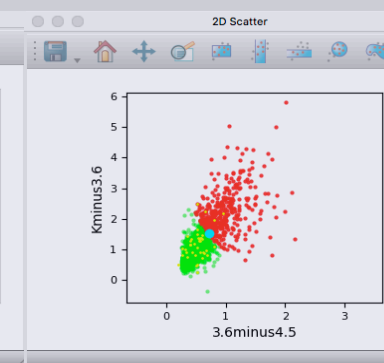
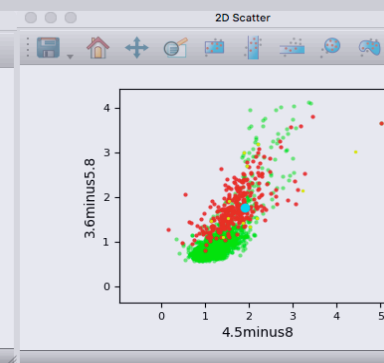
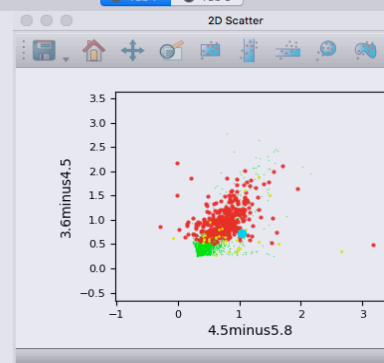
normalize



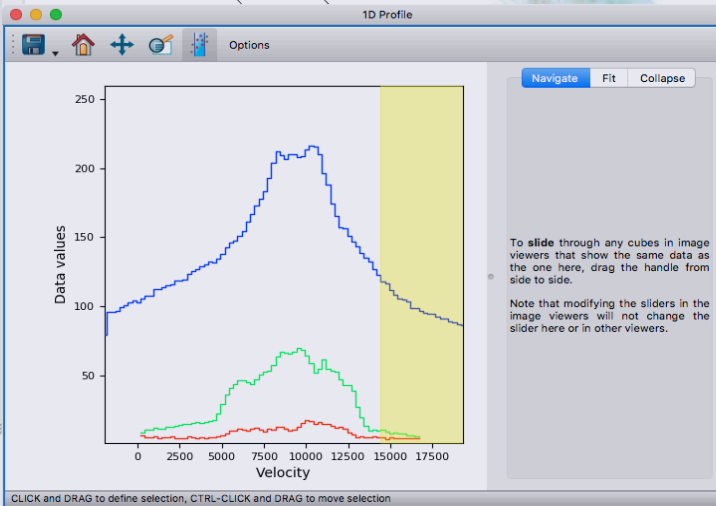
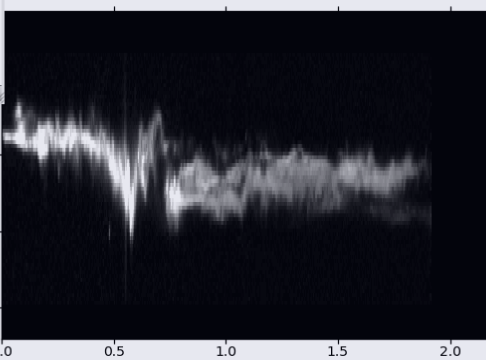
WorldWideTelescope (WWT)



Tab 1 Tab 3



Custom Slice



CLICK and DRAG to define selection, CTRL-CLICK and DRAG to move selection

the 1990s, the number of people in the UK who are aged 65 and over has increased by 1.5 million, and the number of people aged 75 and over has increased by 1.2 million (Office for National Statistics 2000).

There is a growing awareness of the need to address the needs of older people, and the importance of the role of the primary care team in this. The Department of Health (1999) has published a strategy for the care of older people, and the Department of Health (2000) has published a strategy for the care of people with long-term conditions. The Department of Health (2000) has also published a strategy for the care of people with mental health problems.

The Department of Health (2000) has also published a strategy for the care of people with mental health problems. The Department of Health (2000) has also published a strategy for the care of people with mental health problems. The Department of Health (2000) has also published a strategy for the care of people with mental health problems.

The Department of Health (2000) has also published a strategy for the care of people with mental health problems. The Department of Health (2000) has also published a strategy for the care of people with mental health problems. The Department of Health (2000) has also published a strategy for the care of people with mental health problems.

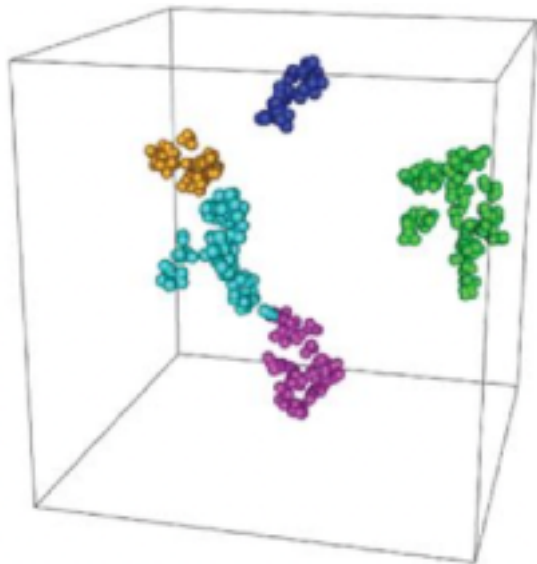
The Department of Health (2000) has also published a strategy for the care of people with mental health problems. The Department of Health (2000) has also published a strategy for the care of people with mental health problems. The Department of Health (2000) has also published a strategy for the care of people with mental health problems.

The Department of Health (2000) has also published a strategy for the care of people with mental health problems. The Department of Health (2000) has also published a strategy for the care of people with mental health problems. The Department of Health (2000) has also published a strategy for the care of people with mental health problems.

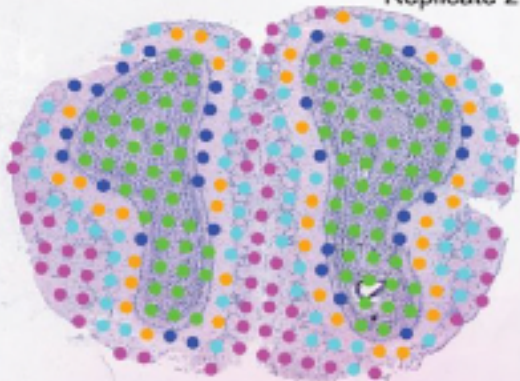
The Department of Health (2000) has also published a strategy for the care of people with mental health problems. The Department of Health (2000) has also published a strategy for the care of people with mental health problems. The Department of Health (2000) has also published a strategy for the care of people with mental health problems.

The Department of Health (2000) has also published a strategy for the care of people with mental health problems. The Department of Health (2000) has also published a strategy for the care of people with mental health problems. The Department of Health (2000) has also published a strategy for the care of people with mental health problems.

The Department of Health (2000) has also published a strategy for the care of people with mental health problems. The Department of Health (2000) has also published a strategy for the care of people with mental health problems. The Department of Health (2000) has also published a strategy for the care of people with mental health problems.



Replicate 2



the 1990s, the number of people in the UK who are employed in the public sector has increased by 1.5 million, from 2.5 million in 1980 to 4 million in 1999 (Department of Health 2000).

There is a growing emphasis on the need to improve the quality of care in the public sector, and to ensure that the public sector is able to meet the needs of the population. This has led to a number of initiatives, including the introduction of the Health Service Act 1990, the Health Service Act 1997, and the Health Service Act 2000. These initiatives have led to a number of changes in the way that the public sector is organised and managed, and to a number of changes in the way that the public sector is funded.

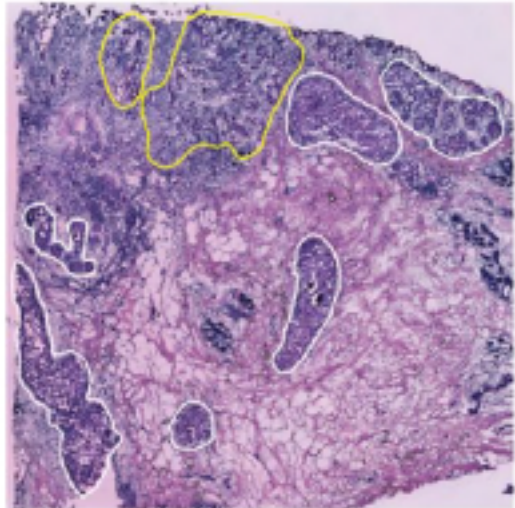
One of the main challenges facing the public sector is the need to improve the quality of care. This is a challenge that is being met in a number of ways. One way is by introducing new standards of care, such as the National Clinical Guidelines. Another way is by introducing new methods of monitoring and evaluation, such as the National Clinical Audit. A third way is by introducing new methods of funding, such as the introduction of the Health Service Act 2000.

Another challenge facing the public sector is the need to ensure that the public sector is able to meet the needs of the population. This is a challenge that is being met in a number of ways. One way is by introducing new methods of organising and managing the public sector, such as the introduction of the Health Service Act 1990. Another way is by introducing new methods of funding, such as the introduction of the Health Service Act 1997. A third way is by introducing new methods of monitoring and evaluation, such as the introduction of the Health Service Act 2000.

One of the main challenges facing the public sector is the need to improve the quality of care. This is a challenge that is being met in a number of ways. One way is by introducing new standards of care, such as the National Clinical Guidelines. Another way is by introducing new methods of monitoring and evaluation, such as the National Clinical Audit. A third way is by introducing new methods of funding, such as the introduction of the Health Service Act 2000.

Another challenge facing the public sector is the need to ensure that the public sector is able to meet the needs of the population. This is a challenge that is being met in a number of ways. One way is by introducing new methods of organising and managing the public sector, such as the introduction of the Health Service Act 1990. Another way is by introducing new methods of funding, such as the introduction of the Health Service Act 1997. A third way is by introducing new methods of monitoring and evaluation, such as the introduction of the Health Service Act 2000.

One of the main challenges facing the public sector is the need to improve the quality of care. This is a challenge that is being met in a number of ways. One way is by introducing new standards of care, such as the National Clinical Guidelines. Another way is by introducing new methods of monitoring and evaluation, such as the National Clinical Audit. A third way is by introducing new methods of funding, such as the introduction of the Health Service Act 2000.



the 1990s, the number of people in the UK who are employed in the public sector has increased by 1.5 million, from 2.5 million in 1980 to 4 million in 1995 (Department of Health 1996).

There is a growing emphasis on the importance of the public sector in the provision of health care, and the need to ensure that the public sector is able to meet the needs of the population. This has led to a number of initiatives, including the establishment of the National Health Service (NHS) in 1948, and the introduction of the Health Act 1999. The Health Act 1999 is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care.

The Health Act 1999 is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care. The Act is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care. The Act is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care.

The Health Act 1999 is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care. The Act is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care. The Act is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care.

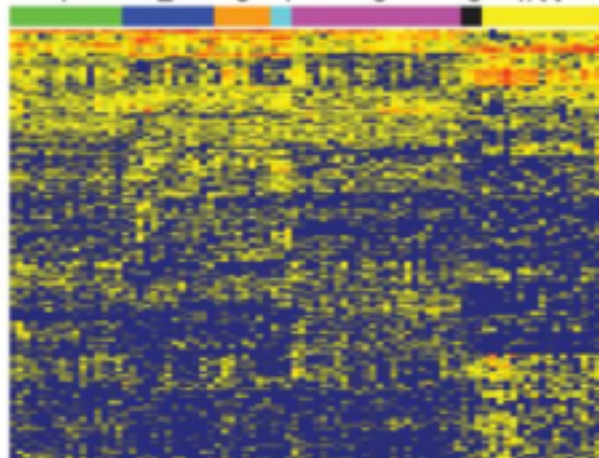
The Health Act 1999 is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care. The Act is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care. The Act is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care.

The Health Act 1999 is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care. The Act is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care. The Act is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care.

The Health Act 1999 is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care. The Act is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care. The Act is a landmark piece of legislation, which sets out the framework for the NHS, and the role of the public sector in the provision of health care.

1 2 3 4 5 6 INV

Genes



IGFBP5
SPARC
VIM
FN1
POSTN
MUCL1
PIP
SCGB2A

GAS6
KRT17
PEG10
AREG
MMP14
DCN

Features











the 1990s, the number of people with a mental health problem has increased by 50% (Mental Health Foundation 2000). The prevalence of mental health problems in the UK is estimated to be 10% (Mental Health Foundation 2000).

There is a growing awareness of the need to address the needs of people with mental health problems in the workplace. The Department of Health (2000) has published a strategy for mental health care, which includes a commitment to 'improve the lives of people with mental health problems in the workplace'. The strategy also states that 'the workplace should be a place where people with mental health problems can thrive and contribute to society'.

The purpose of this paper is to explore the experiences of people with mental health problems in the workplace. The paper will first discuss the prevalence of mental health problems in the workplace. It will then explore the experiences of people with mental health problems in the workplace, focusing on the challenges they face and the support they need. Finally, the paper will discuss the implications of the findings for practice.

Prevalence

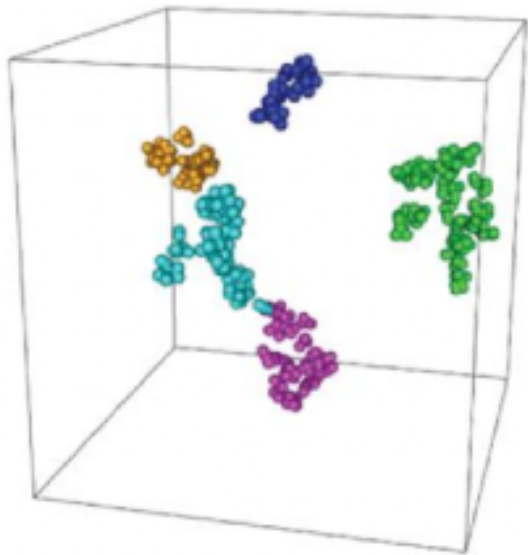
The prevalence of mental health problems in the workplace is estimated to be 10% (Mental Health Foundation 2000). This is based on a survey of 10,000 people in the UK, which found that 10% of people had a mental health problem in the last 12 months. The prevalence of mental health problems in the workplace is likely to be higher if people with mental health problems are not reporting their condition.

The prevalence of mental health problems in the workplace is likely to be higher if people with mental health problems are not reporting their condition. This is because people with mental health problems may be reluctant to disclose their condition to their employer, or they may not be aware of the need to do so. This can lead to people with mental health problems being overlooked for support and resources.

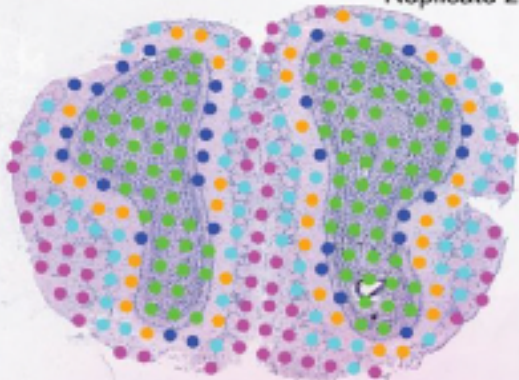
The prevalence of mental health problems in the workplace is likely to be higher if people with mental health problems are not reporting their condition. This is because people with mental health problems may be reluctant to disclose their condition to their employer, or they may not be aware of the need to do so. This can lead to people with mental health problems being overlooked for support and resources.

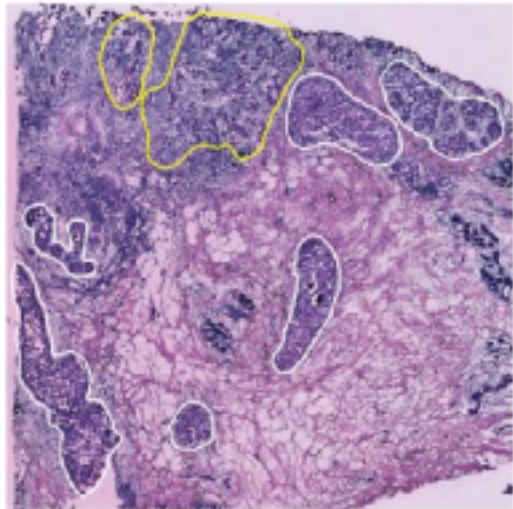
The prevalence of mental health problems in the workplace is likely to be higher if people with mental health problems are not reporting their condition. This is because people with mental health problems may be reluctant to disclose their condition to their employer, or they may not be aware of the need to do so. This can lead to people with mental health problems being overlooked for support and resources.

The prevalence of mental health problems in the workplace is likely to be higher if people with mental health problems are not reporting their condition. This is because people with mental health problems may be reluctant to disclose their condition to their employer, or they may not be aware of the need to do so. This can lead to people with mental health problems being overlooked for support and resources.



Replicate 2





the 1990s, the number of people in the UK who are employed in the public sector has increased by 1.5 million, from 2.5 million in 1980 to 4 million in 1995. The public sector has become a major employer in the UK, and its growth has been a major factor in the overall growth of the economy. The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy. The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy.

The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy. The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy. The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy. The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy.

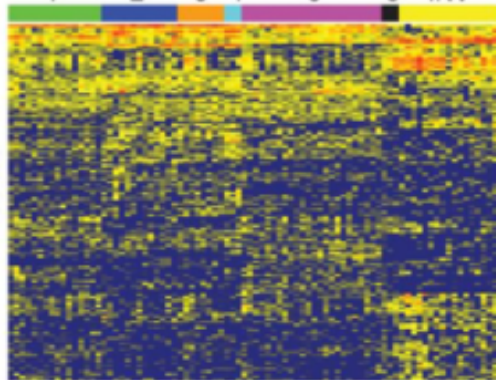
The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy. The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy. The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy. The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy.

The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy. The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy. The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy. The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy.

The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy. The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy. The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy. The public sector has also become a major provider of social services, and its growth has been a major factor in the overall growth of the economy.

1 2 3 4 5 6 INV

Genes



IGFBP5
SPARC
VIM
FN1
POSTN
MUCL1
PIP
SCGB2A

GAS6
KRT17
PEG10
AREG
MMP14
DCN

Features