

# Berkeley Lab Incident Statistics Fiscal Year 2019

## Data Analysis, Takeaways & Recommendations

This information is provided on a yearly basis.

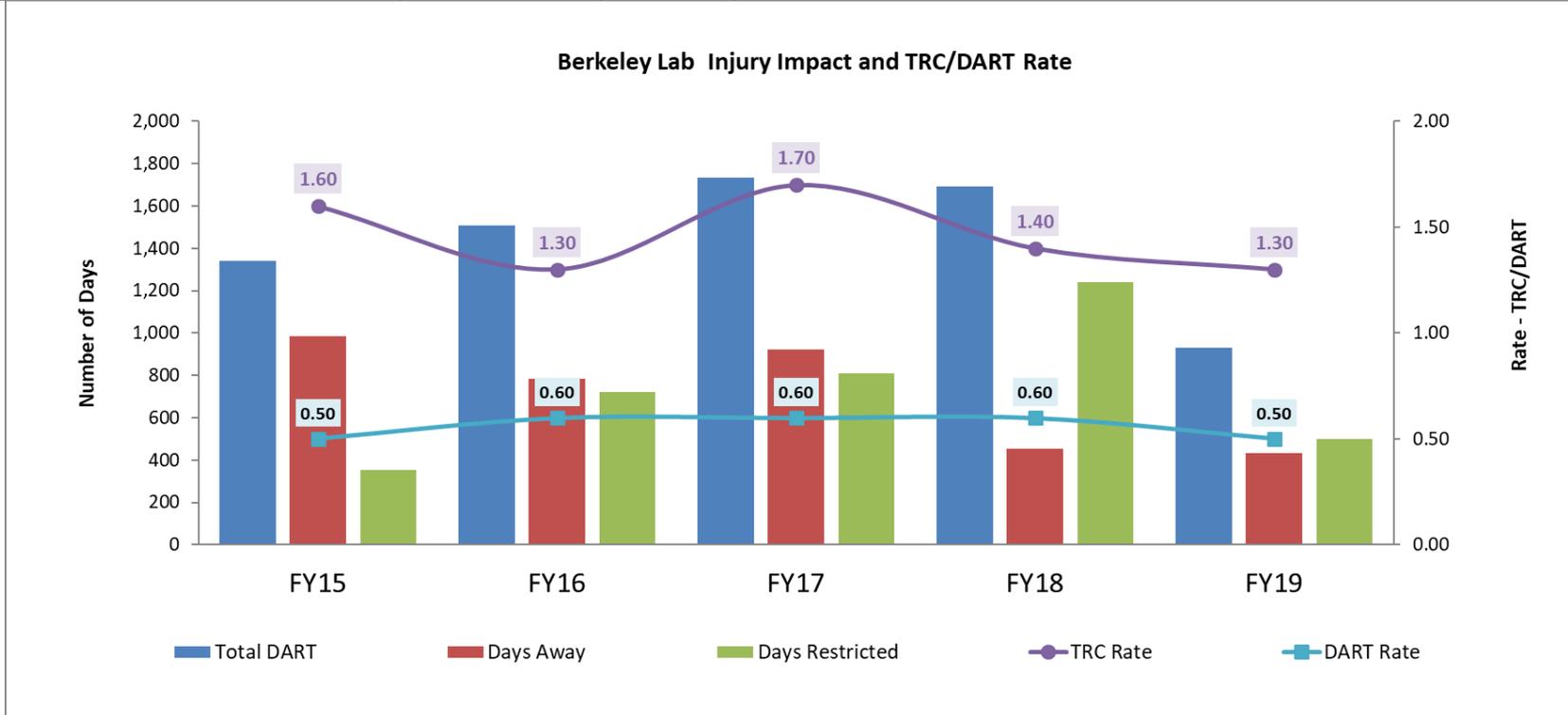
Please share this information with your Areas/Divisions.

Refer questions to: [mmalexandre@lbl.gov](mailto:mmalexandre@lbl.gov)

# Summary of FY19

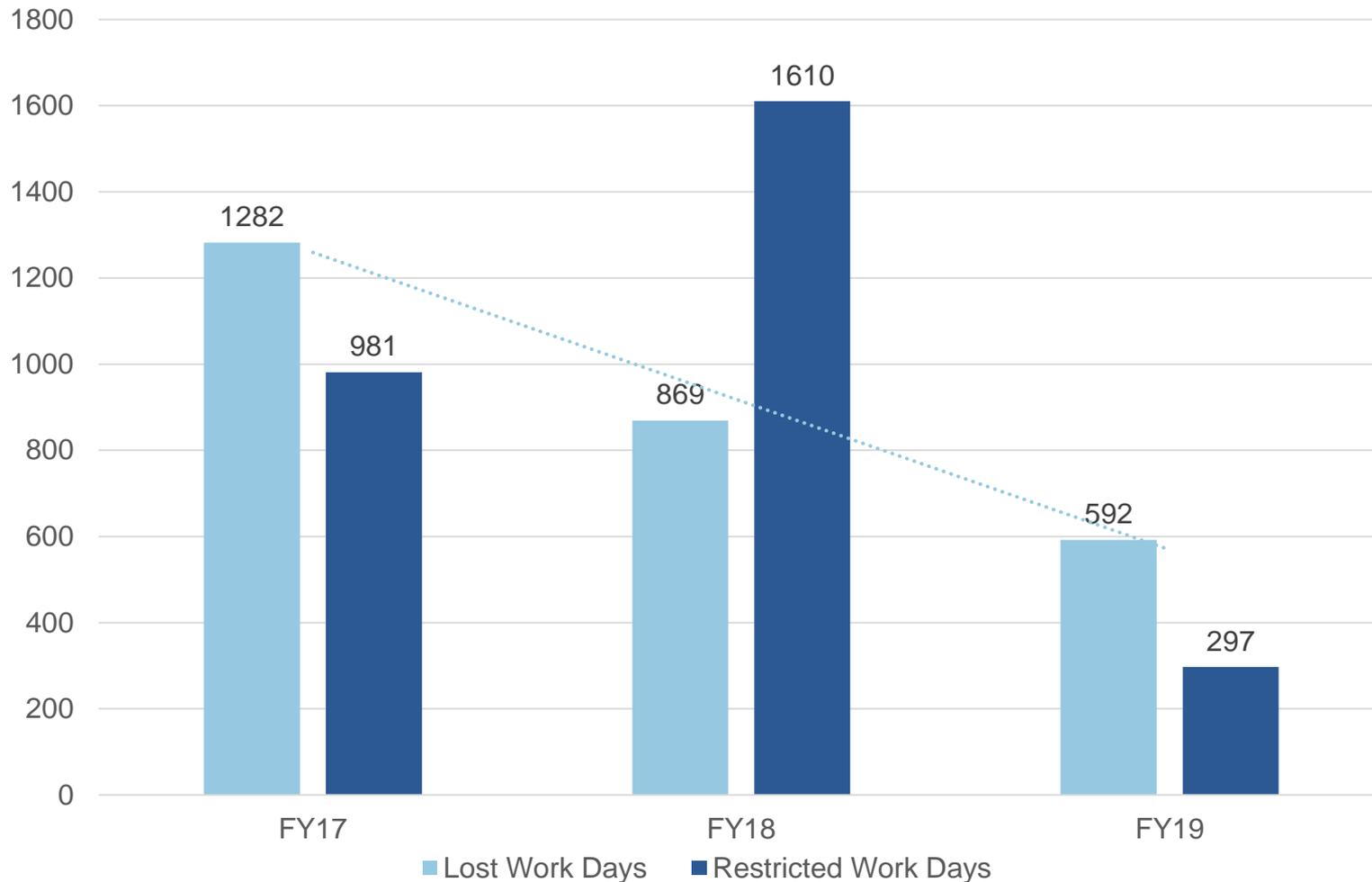
- TRC/DART rates, Total DART and Days Restricted all reduced in FY19
- Three injury categories account for 66% of all TRC:
  - Ergonomics- Computer Use, Slips/Trips/Falls (STF), & Material Handling
- Three injury categories account for 75% of all DART:
  - STF, Struck by/against, & Ergonomics-Computer Use
  - STF remain highest amount of severe injuries (38%)
- Job categories with highest amount of injuries:
  - Crafts/Service, Administrative, Technicians, and Students, GSRA, Postdocs
- Scientific Areas:
  - 56% of all Recordable injuries
  - Struck By/Against injuries account for 48% of all Scientific Areas injuries
- Operation Areas:
  - 44% of all Recordable injuries
  - Facilities Division still represents largest amount of injuries. We are seeing positive trend, but a few cases account for a large % of lost work days

# In FY19 TRC/DART Rates, Total DART & Days Restricted reduced Days Away stayed about the same



	<b>Total DART</b>	<b>Days Away</b>	<b>Days Restricted</b>	<b>TRC Rate</b>	<b>DART Rate</b>
<b>FY15</b>	1,340	985	355	1.60	0.50
<b>FY16</b>	1,506	786	720	1.30	0.60
<b>FY17</b>	1,733	922	811	1.70	0.60
<b>FY18</b>	1,691	452	1,239	1.40	0.60
<b>FY19</b>	930	432	498	1.30	0.50

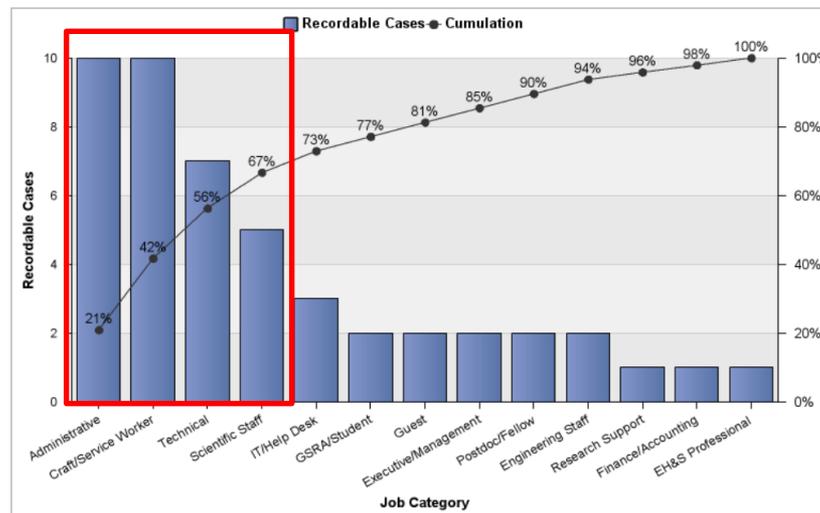
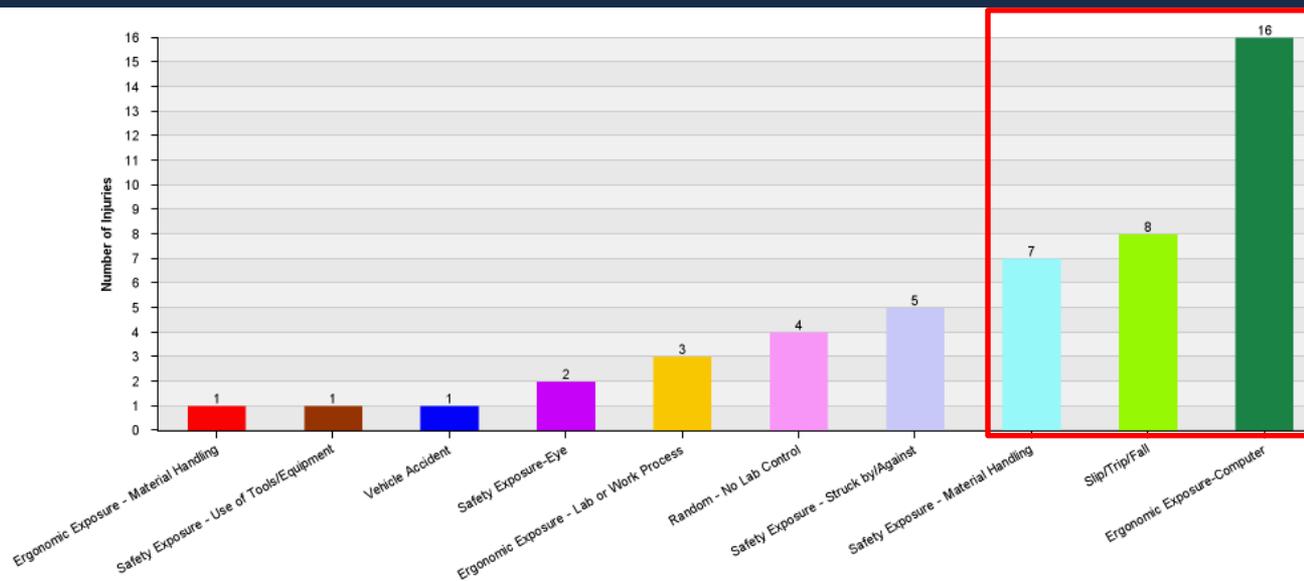
# FY17-19 lost & restricted work days: FY19 saw a drop in lost & restricted work days



Note: several lost day cases in FY19 are not closed so additional lost days can be expected

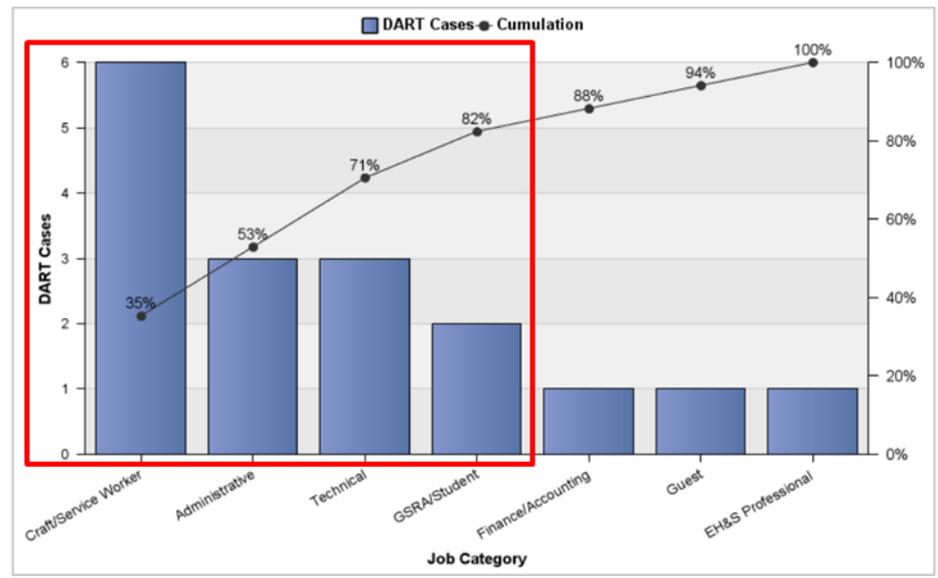
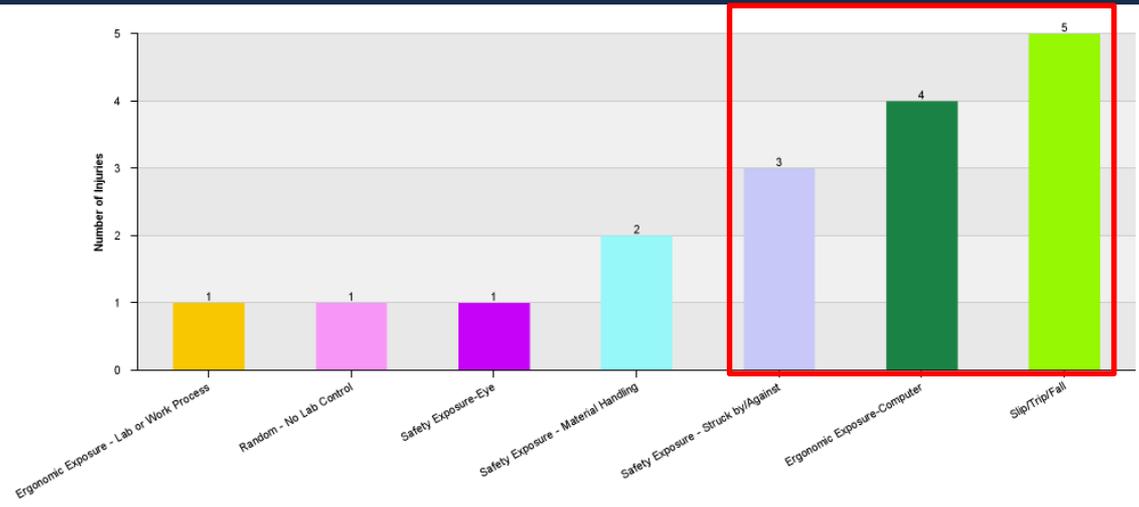
# FY19 Recordable Injuries: Total=48

Top three injuries remain the same; four job categories account for 67%



# FY19 Days Away, Restricted, Transferred (DART) Injuries: Total=17

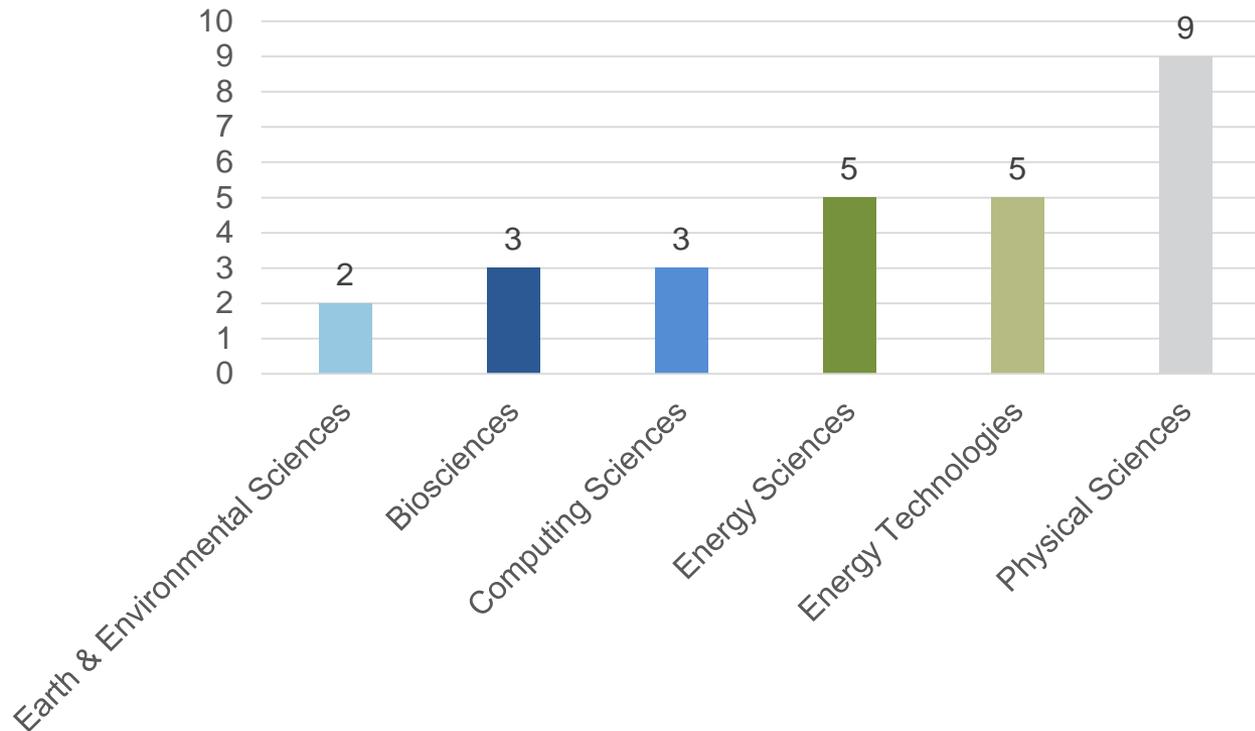
## DART cases reduced by 25%; Four types of job categories account for 82%



# Scientific Areas FY19

## 27 out of 48 (56%) of all TRC occurred in Scientific Areas

Recordable Injuries Per Scientific Area FY19



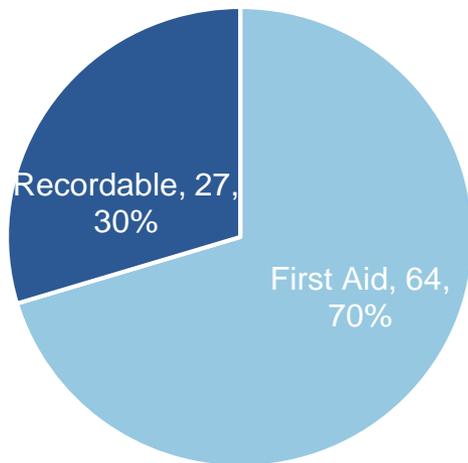
5 out of 17 (30%) of DART cases occurred in Scientific Areas

There were 96 lost days and 131 restricted days associated with these cases

96 lost days resulted from only 3 cases (average= 32 days/case)

# Deeper dive into Scientific Area injuries

All Types of Injuries  
Total=91



Most impacted employees:  
Students, Postdocs, & GSAs: 50%  
Research Assoc./Assistants: 28%

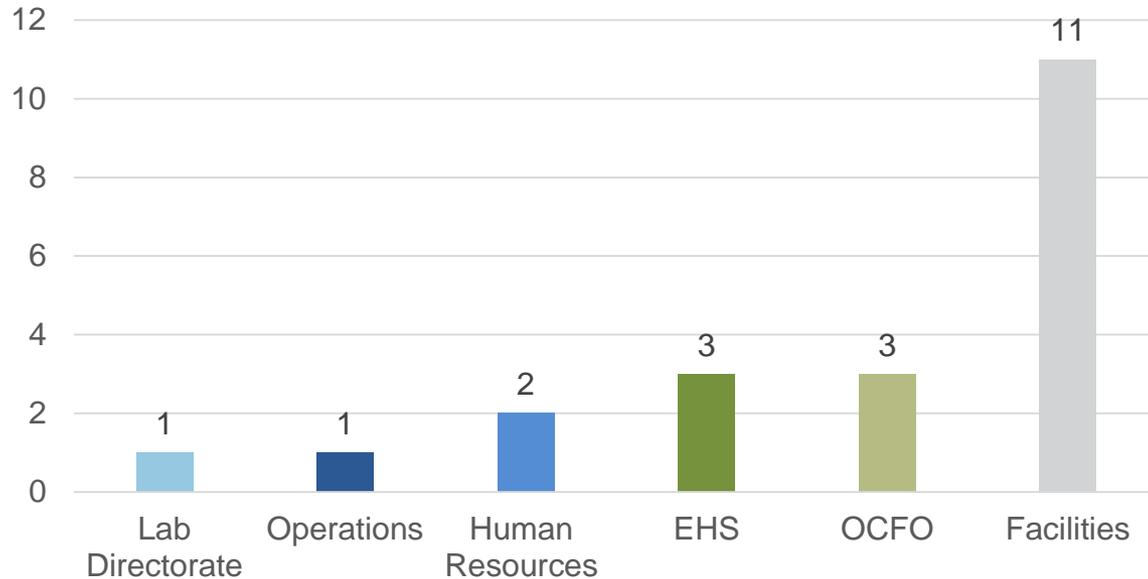
Most common types of injuries:  
Struck By/Against: 48%  
Chemical Exposure: 15%  
Safety Eye Exposure: 13%

Three Divisions Account for 58% of Scientific Area Injuries:  
Molecular Foundry: 25%  
Biological Systems and Engineering: 18%  
Environmental Genomics & Systems Biology: 15%

# Operations Areas FY19

## 21 out of 48 (44%) of all TRC occurred in Operations

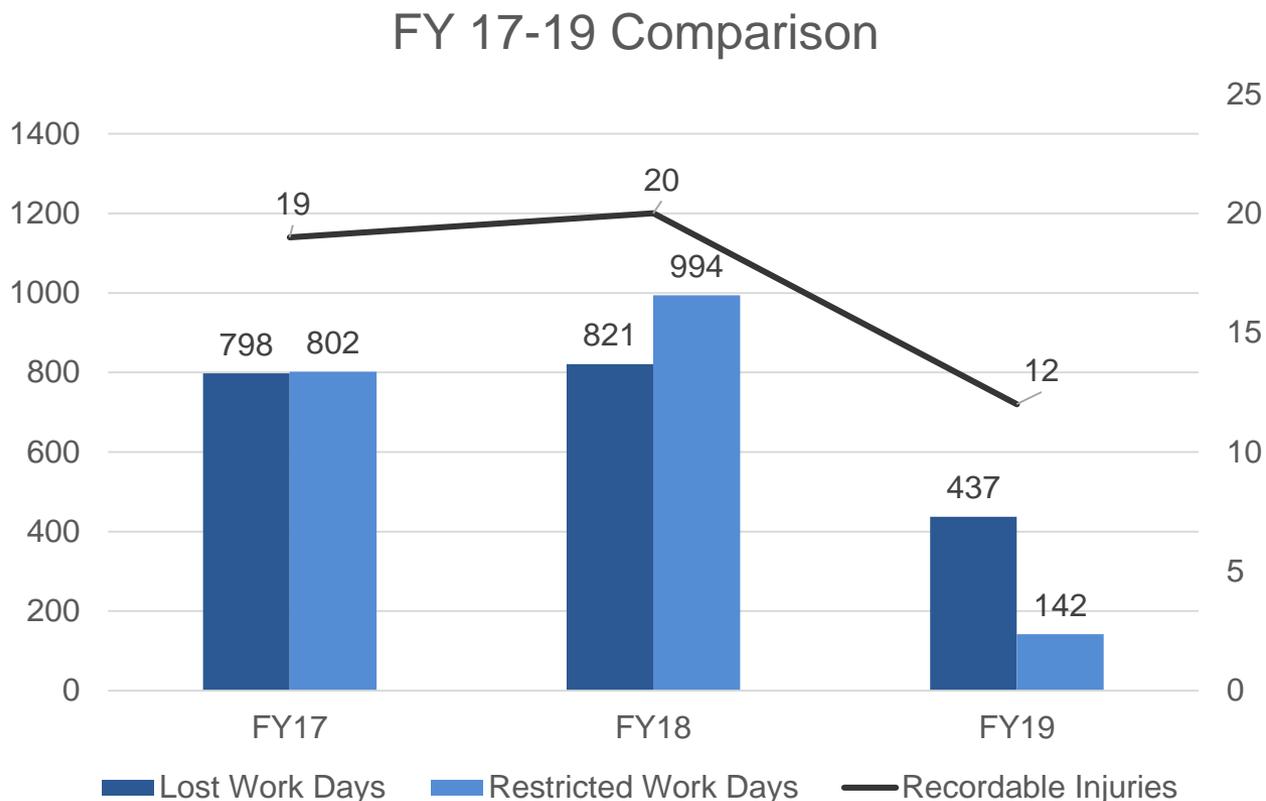
Recordable Injuries Per Operations Divisions



12 out 17 (70%) of DART cases occurred in Operations

There were 473 lost days and 166 restricted days associated with these cases  
Note: one case accounted for 271 of the lost days (average= 68 days/ case)

# Deeper dive into Facilities injuries FY19: Recordable Cases, Lost & Restricted Days have reduced



In FY19 7 out of the 11 (64%) Recordable Injuries in Facilities were DART

In FY17-19 2-5 cases/ year account for 84-96% of Lost Work Days

Recommend closely examining these cases to look for opportunities for improvement

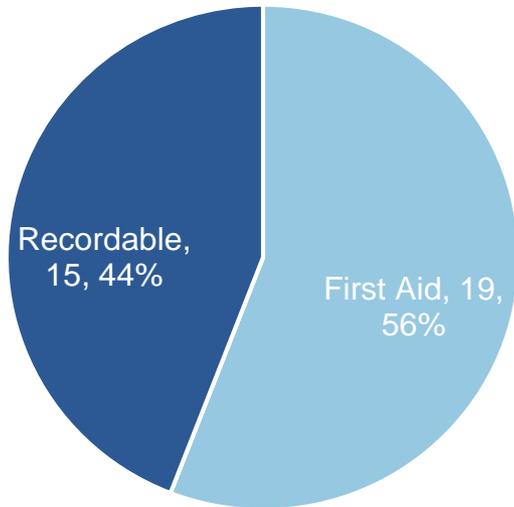
# **Common Injuries: Takeaways & Recommendations :**

**Office Ergonomics  
Struck by/Against  
Slips, Trips & Falls  
Material Handling**

**At-risk Groups:  
Students, GSRAs and Postdocs**

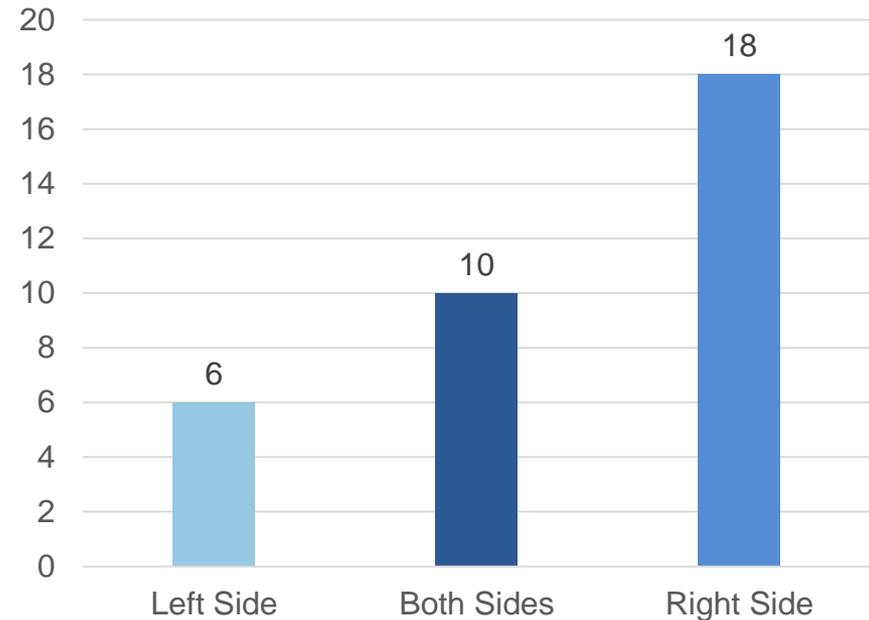
# Office Ergonomic Injuries are preventable: Many become recordable and right side most impacted

First Aid vs Recordable Injuries N=34



Divisions Most Impacted:  
Human Resources, OCFO,  
NERSC and Engineering

Body Parts Impacted



Jobs Most Impacted:  
Administrative=10  
Staff Scientists/Engineers=9

# Office Ergonomic Injuries are preventable

## Heavy/increased workload needs to be addressed via line management

### Common factors:

- Mouse use 66%
- Heavy/ increased workload 53%
- Working directly on laptop 15%

### Factors may relate/contribute to recordable injuries:

- 66% had delayed reporting (experienced discomfort 4 weeks or longer)
- 53% had previous injuries
  - 25% had more than one injury to same body part(s)
- 47% were not taking adequate breaks

### What can be done to reduce these injuries:

1. Communication between supervisor and employee about workload is key... discuss, plan & prepare
2. Target at-risk Divisions, Job Categories, & employees with previous injury
3. Utilize resources RSI Guard and laptop accessories

# Struck By/Against injuries commonly involve sharps: Resources available from EHS Biosafety SME

18 injuries (41%) occurred while performing lab tasks involving cuts, punctures, lacerations and/or needle sticks

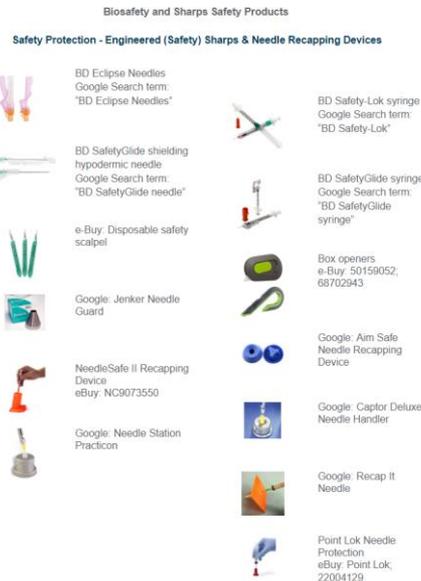
12 out of 18 (67%) involved students, post docs and GSRAs

Resources are available from EHS Biosafety SME to prevent and procure proper tools to prevent these injuries:

[Sharps Safety in Research](#)

[Biosafety and Sharps Safety Products](#)

Contact [Biosafety@lbl.gov](mailto:Biosafety@lbl.gov) if any questions.



## Sharps Safety in Research

Cuts and punctures are one of the leading injury types in laboratory work environments at LBNL, but this injury is often preventable with the right equipment and good practices. Injuries have occurred to laboratory researchers working with needles, scalpels, razor blades, microtomes, glass pipettes and broken glassware. We would like to point out a few places where sharps injury are more likely to occur and recommend tools that can help you work with sharps more safely.

### Needles:

#### Substituting

- Substitute with blunt-end needles when possible

#### Recapping

- ⚠ **Never recap a needle without any protection!**
- If you have to recap, use a recapping tool or a pivoting-shield needle



#### Disposal

- Use rigid containers with safety lids which are designed to hold sharps
- Have a sharps container in your immediate work area. Dispose of used sharps **IMMEDIATELY** after you're finished with sharps. Do NOT set sharps aside first.
- Close sharps containers when they are two-thirds full. Use sharps containers that are transparent for easier monitoring.
- Never dispose of needles or other sharps in the trash, even if they are clean



#### Retraction or other two-handed motions

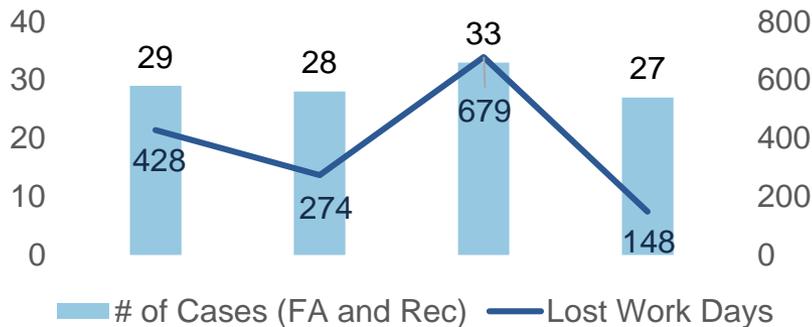
- Avoid two-handed motions with needles
- If you perform a two-handed motion, gently twist, rather than pulling or forcing the action

# Despite awareness efforts, we are not seeing much of a change in slip, trip & fall injuries in the past few years

1. Walking is #1 hazard for pedestrian/traffic safety. Emphasize holding handrails, walking mindfully, awareness to uneven walkways, not obstructing views while holding objects, & pocketing phones.
2. Bicycling downhill continues to also be a hazard. Emphasize controlling speed, knowing equipment/skills for down hill riding, and be aware roadway obstructions.
3. Students, GSRA's and Post-docs outreach should be emphasized. They have a disproportionately higher injury rate for these types of injuries.



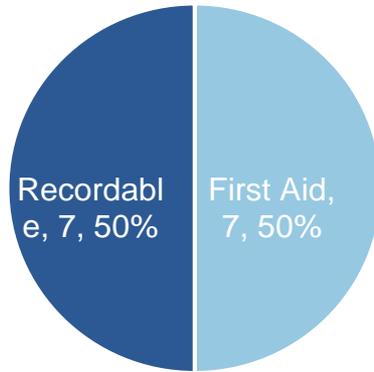
Total Number of Cases and Lost Work Days FY16-19



Common injuries: sprains, abrasions, lacerations, contusions and fractures  
 30% of these injuries are Recordable

# Material Handling injuries can occur during routine and non-routine work tasks

## Material Handling Injuries



Commonly occur when:  
Lifting, carrying, pushing/pulling objects 25 pounds or heavier, while performing material handling over extended periods of time, and/or while working overhead, twisting, reaching away from body or bending down.

Ensure pre-start and work planning activities incorporate safe material handling

Always be thinking...  
Is there a safer/more efficient way to do material handling?

Body parts most impacted:  
Low back 43%  
Shoulder/arms 36%  
Neck 21%

Divisions impacted:  
Scientific Divisions=7 injuries  
Facilities=5 injuries  
Other=2

**Analysis of Students,  
GSRAs and Postdocs  
identify them as  
'at risk' groups  
Data from CY14-18**

# 124 injuries involved Students, GSRAs & Postdocs:

**We have a responsibility to protect them while doing work for us**

**Students, GSRAs and Postdocs have been involved in some of the most severe incidents as well as some 'near misses' that could have been severe injuries. These injuries commonly occur while performing lab tasks.**

## **ISM issues identified:**

1. Insufficient on-the-job training, communication, work planning and/or hazard analysis
2. Unclear/incomplete authorization
3. Exceeding scope of work

## **They make up a disproportionate amount of injuries**

In 2018, 25% of all injuries involved Students, GSRA and Postdocs but... they equal only 10% of lab population  
CY14-18 they were involved in 50% of NTS incidents while performing lab tasks

# Recommendations to ensure safety of Students, GSRAs and Postdocs

1. Reinforce first line management ownership of safety of their employees.
  - Ways to provide more direct supervision, guidance, & training - such as establishing applicable OJT, setting clear hold points and clear scope of work.
2. Improve safety culture by enhancing ISM – integrating safety into research  
For example:
  - Safety should be part of research during design and execution
  - Having a questioning attitude, but knowing when the science has ‘changed’ enough to warrant discussion & additional work planning/controls

# Definitions/Terminology

First Aid Cases involve one-time, short-term treatment and requires little technology or training to administer. First aid can include cleaning minor cuts, scrapes, or scratches; treating a minor burn; applying bandages and dressings; the use of non-prescription medicine; draining blisters; removing debris from the eyes; massage; and drinking fluids to relieve heat stress.

Recordable Cases involves medical treatment **beyond** first aid such as: providing therapy; prescription medications (or use of a non-prescription drug at prescription strength); using wound closing devices such as surgical glue, sutures, and staples; using any devices designed to immobilize parts of the body; and administration of oxygen as well as an injury that causes death, days away from work, restricted work or transfer to another job, or loss of consciousness

Total Recordable Cases (TRC) All recordable injuries including: all work related deaths, illnesses, and injuries which result in treatment beyond first aid, loss of consciousness, work restrictions, and/or transfer to another job (permanent/temporary). Examples include: thermal and chemical burns; cuts, abrasions and punctures; fractures/ broken bones; respiratory irritations; hearing loss; amputations; and sprains or strain

# Definitions/Terminology

Days Away, Transferred, or Restricted (DART) Cases are all Recordable Cases that have days away from work, transferred work (employee able to return to work, but not perform routine work), and/or restricted work that allow employee to return to routine work with reasonable accommodations

- Days Away= Injury prevents employee from returning to work for one or more day(s)
- Transferred/Restricted=Injury prevents an employee from performing one or more of their routine job functions or from working the entire workday.

Berkeley Lab strives to reasonably accommodate injured workers and reduce the amount of days away  
Various studies illustrate benefits to employees *and* employers in returning employees to work asap after injuries