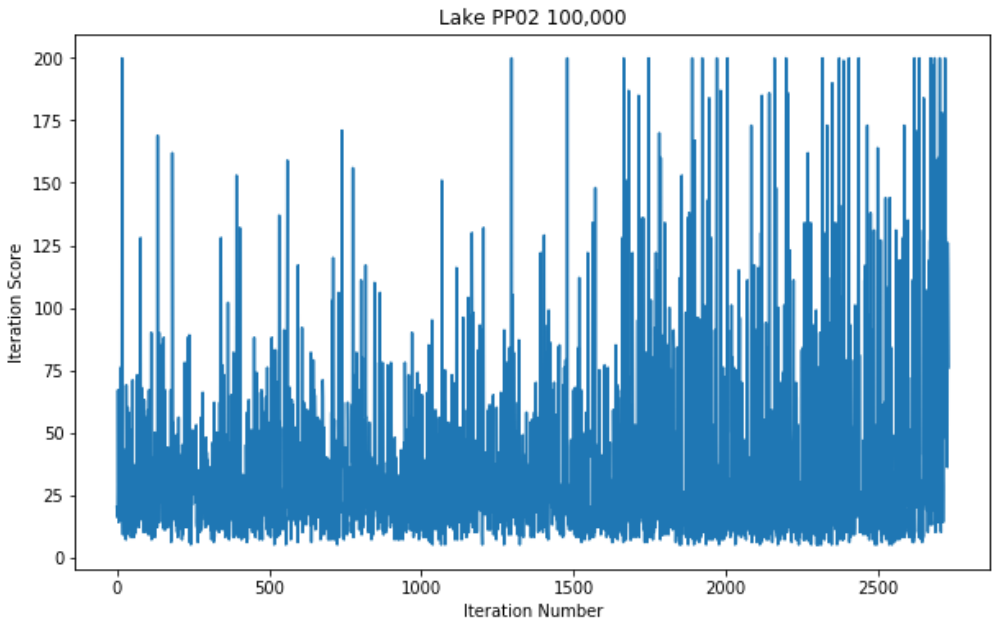
In [14]:
```
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
```

In [69]:
```
# LAKE PP02 100,000
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_pp02_100000.csv")
lake_pp02_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data
.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x_h = pd.to_numeric(lake_pp02_100000_df.index.values)
pp02_hy = pd.to_numeric(lake_pp02_100000_df.l.values)
ax.set_title("Lake PP02 100,000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x_h , pp02_hy);
```

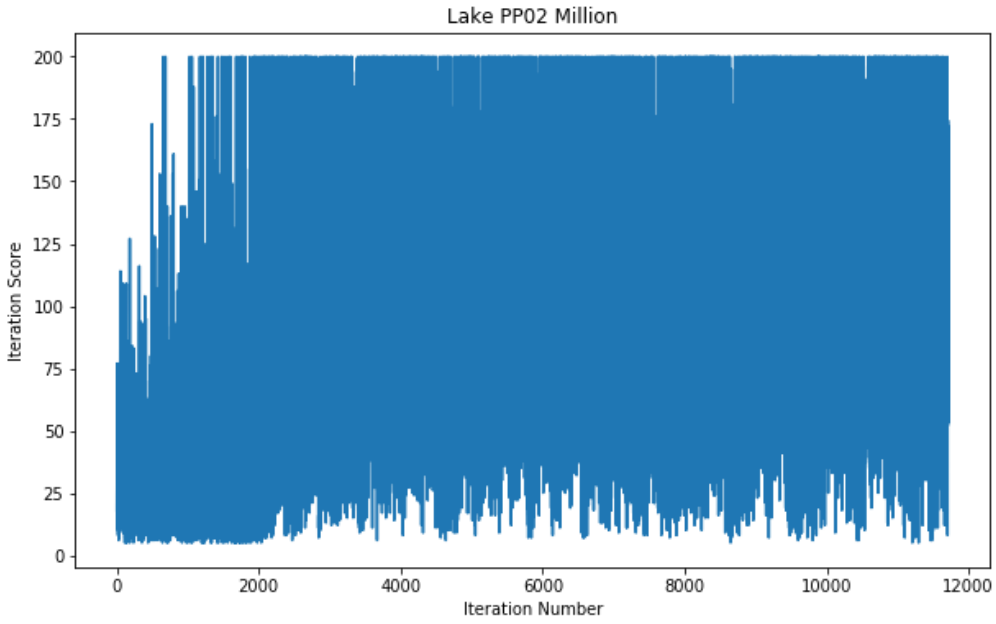
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:5: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  """
```



In [70]:
```
# LAKE PP02 MILLION
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_pp02_million.csv")
lake_pp02_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_dat
a.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x_m = pd.to_numeric(lake_pp02_million_df.index.values)
pp02_my = pd.to_numeric(lake_pp02_million_df.l.values)
ax.set_title("Lake PP02 Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x_m , pp02_my);
```

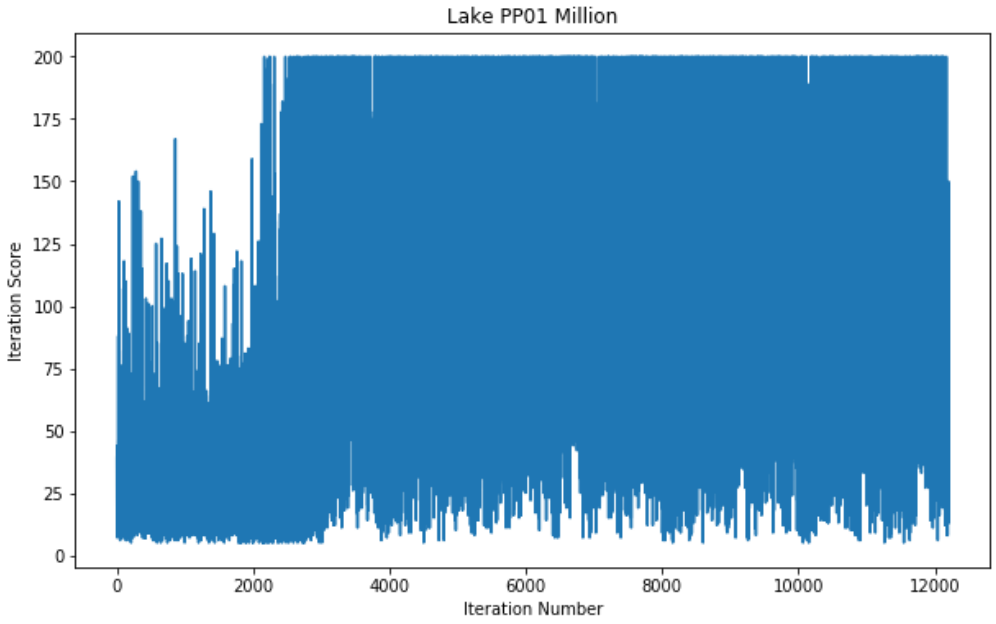
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [72]:
```
# LAKE PP01 MILLION
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_pp01_million.csv")
lake_pp01_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_dat
a.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_pp01_million_df.index.values)
pp01_my = pd.to_numeric(lake_pp01_million_df.l.values)
ax.set_title("Lake PP01 Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x , pp01_my);
```

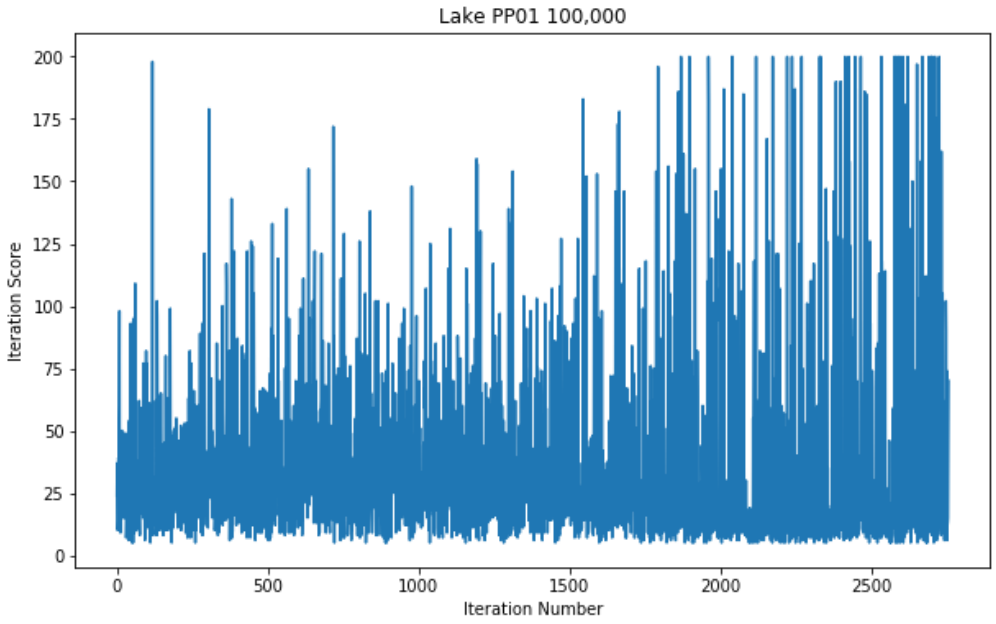
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [73]:
```
# LAKE PP01 100,000
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_pp01_100000.csv")
lake_pp01_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data
.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_pp01_100000_df.index.values)
pp01_hy = pd.to_numeric(lake_pp01_100000_df.l.values)
ax.set_title("Lake PP01 100,000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x , pp01_hy);
```

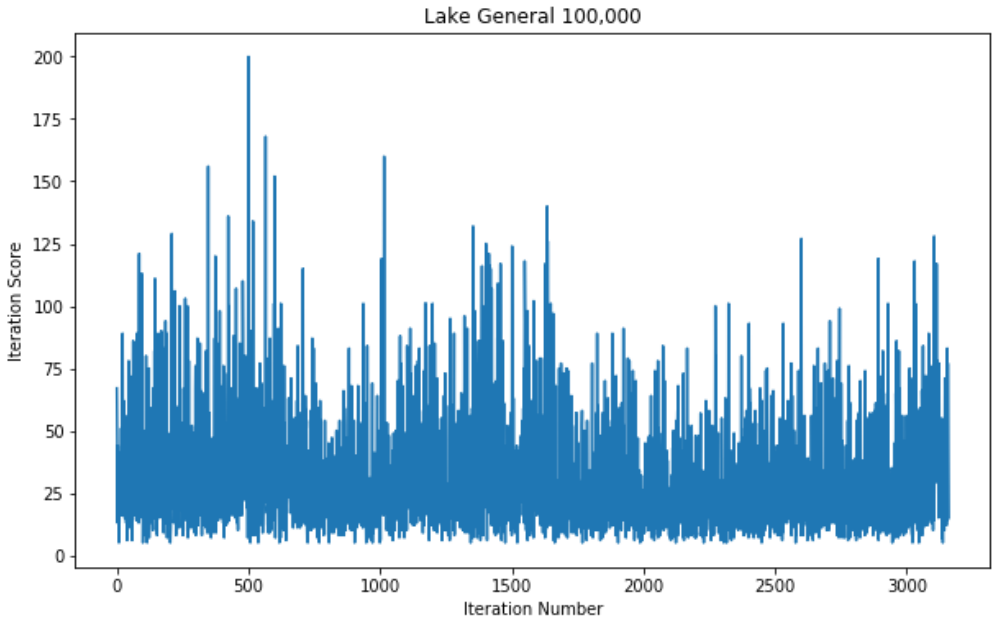
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [74]:
```
# LAKE GENERAL 100,000
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_general_100000.csv")
lake_general_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_d
ata.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_general_100000_df.index.values)
general_hy = pd.to_numeric(lake_general_100000_df.l.values)
ax.set_title("Lake General 100,000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x , general_hy);
```

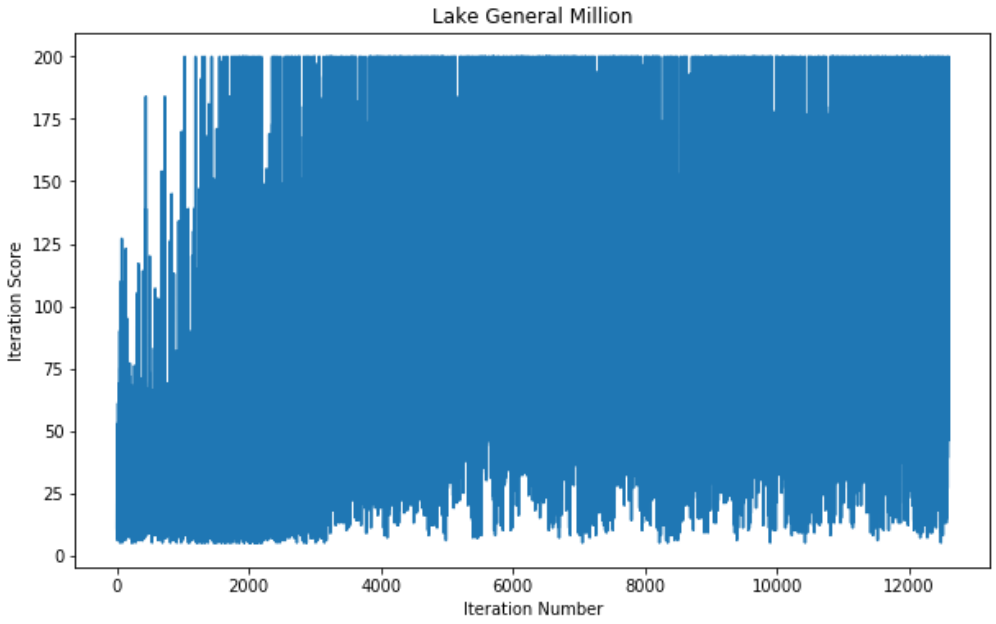
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [76]:
```
# LAKE GENERAL Million
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_general_million.csv")
lake_general_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_
data.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_general_million_df.index.values)
general_my = pd.to_numeric(lake_general_million_df.l.values)
ax.set_title("Lake General Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x , general_my);
```

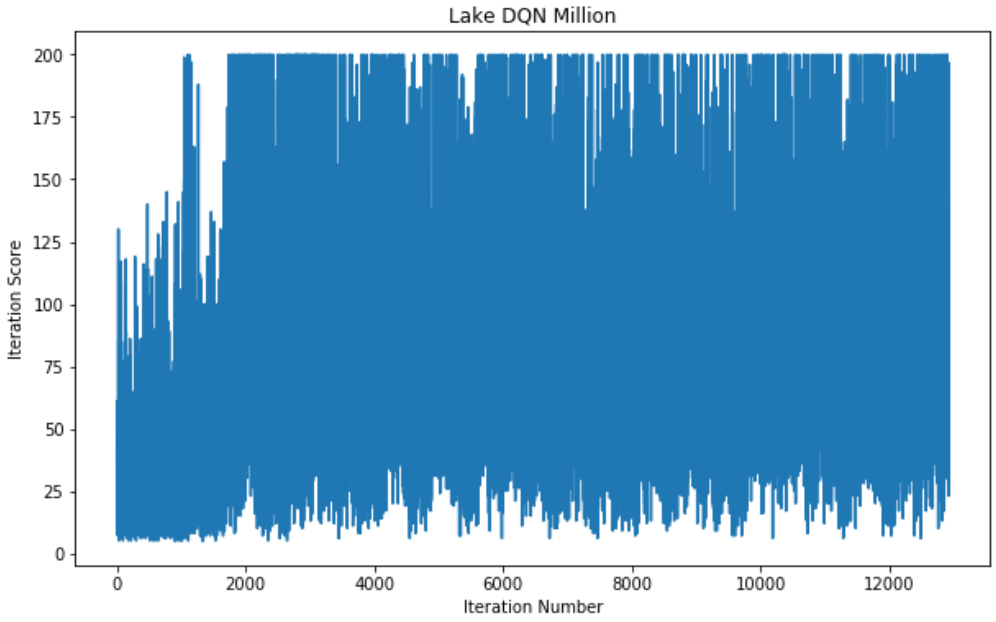
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [50]:
```
# LAKE DQN Million
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_dqn_million.csv")
lake_dqn_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data
.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_dqn_million_df.index.values)
dqn_my = pd.to_numeric(lake_dqn_million_df.l.values)
ax.set_title("Lake DQN Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x , dqn_my);
```

```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```

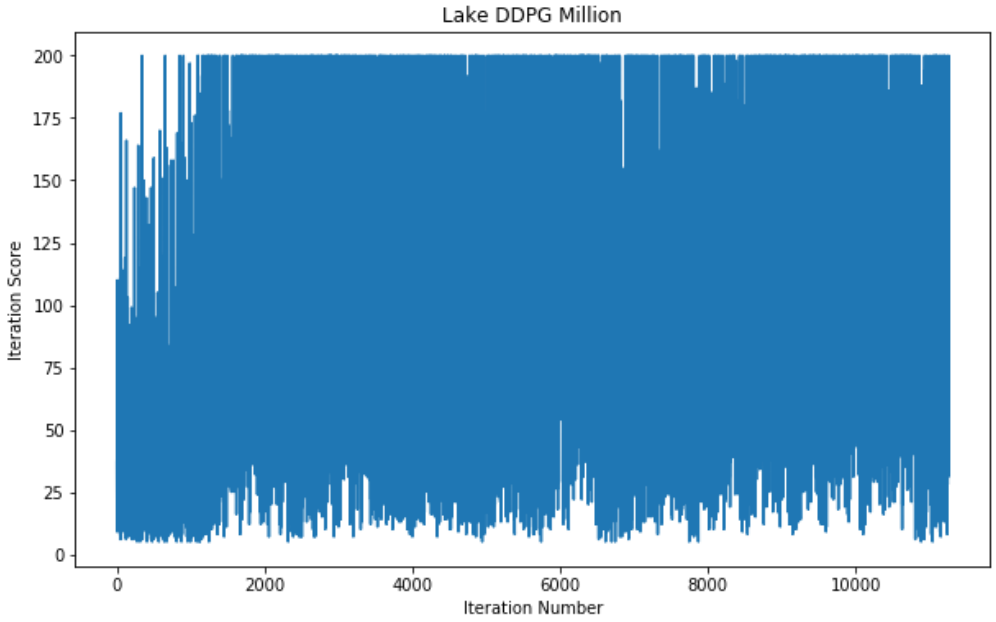


In [52]:
```
# LAKE DDPG Million
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_ddpg_million.csv")
lake_ddpg_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_dat
a.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_ddpg_million_df.index.values)
y = pd.to_numeric(lake_ddpg_million_df.l.values)
ax.set_title("Lake DDPG Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);

# Moving average dangerous, maybe like k-nearest neigbors type of thing
```

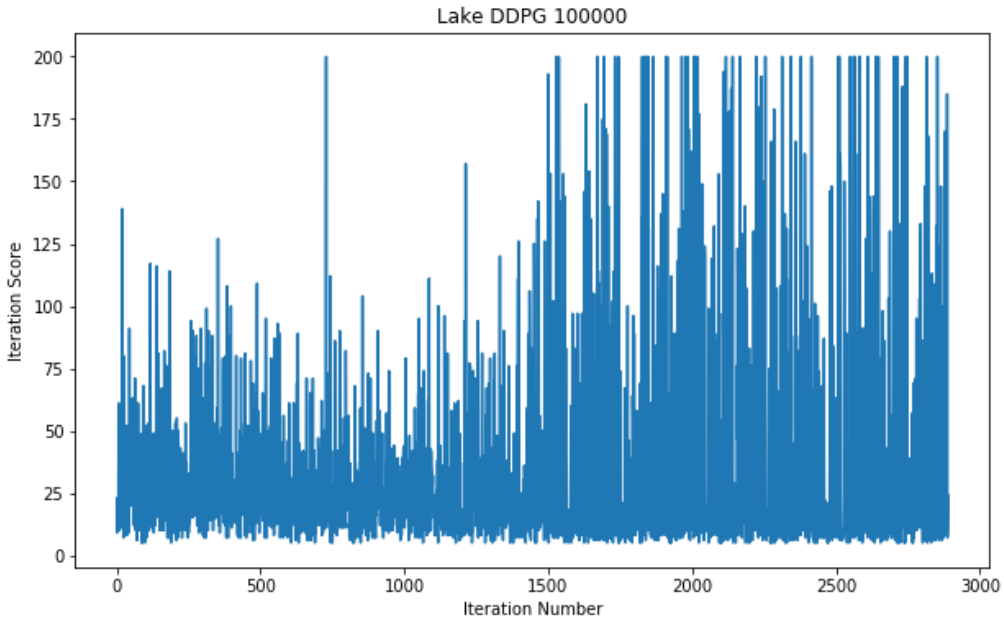
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [56]:
```
# LAKE DDPG 100000
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_ddpg_100000.csv")
lake_ddpg_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data
.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_ddpg_100000_df.index.values)
y = pd.to_numeric(lake_ddpg_100000_df.l.values)
ax.set_title("Lake DDPG 100000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);
```

```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```

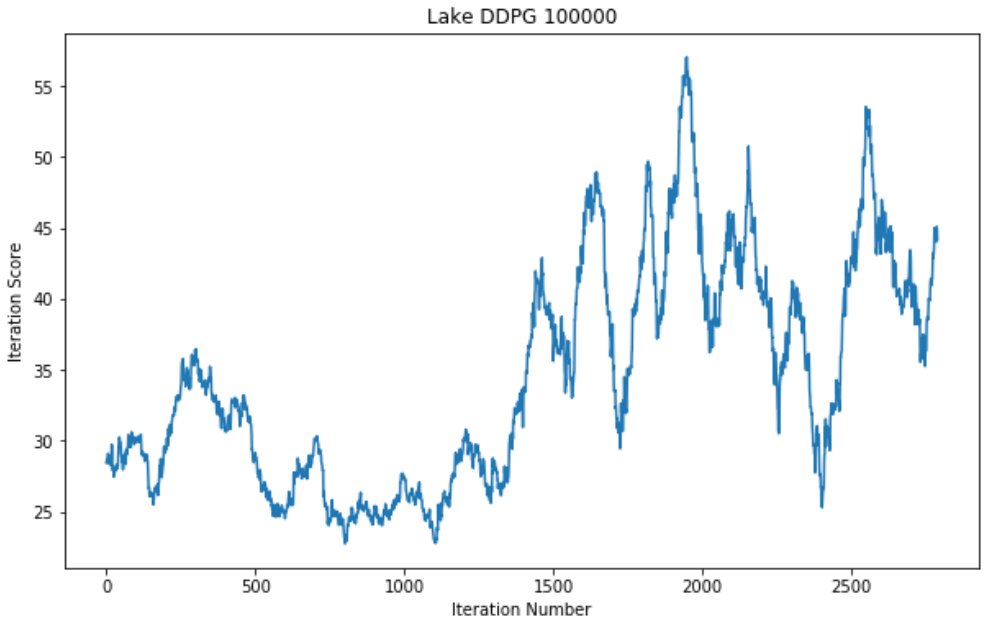


In [60]:
```
k = 100
y2 = []
for i in range(len(y) - k):
    num = 0
    for j in range(k):
        num += y[i+j]
    y2.append(num/k)

# LAKE DDPG 100000
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_ddpg_100000.csv")
lake_ddpg_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data
.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x2 = pd.to_numeric(lake_ddpg_100000_df.iloc[:-k].index.values)
#y = pd.to_numeric(lake_ddpg_100000_df.l.values)
ax.set_title("Lake DDPG 100000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x2, y2);
```

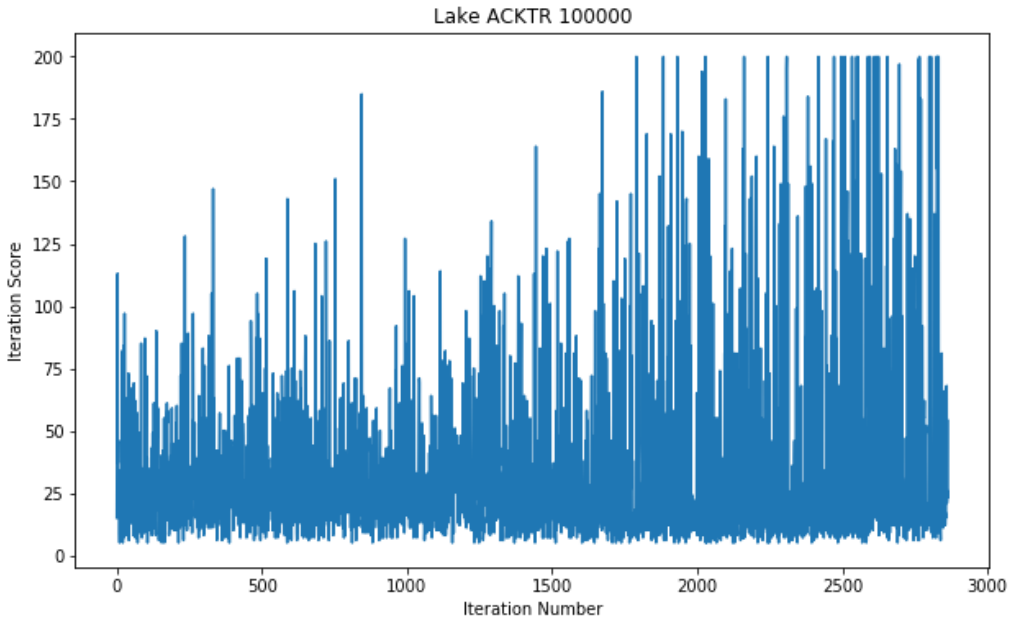
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:13: FutureWarning: Method .as_matrix will be removed in a f
uture version. Use .values instead.
  del sys.path[0]
```



In [61]:
```
# LAKE ACKTR 100,000
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_acktr_100000.csv")
lake_acktr_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_dat
a.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_acktr_100000_df.index.values)
y = pd.to_numeric(lake_acktr_100000_df.l.values)
ax.set_title("Lake ACKTR 100000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);
```

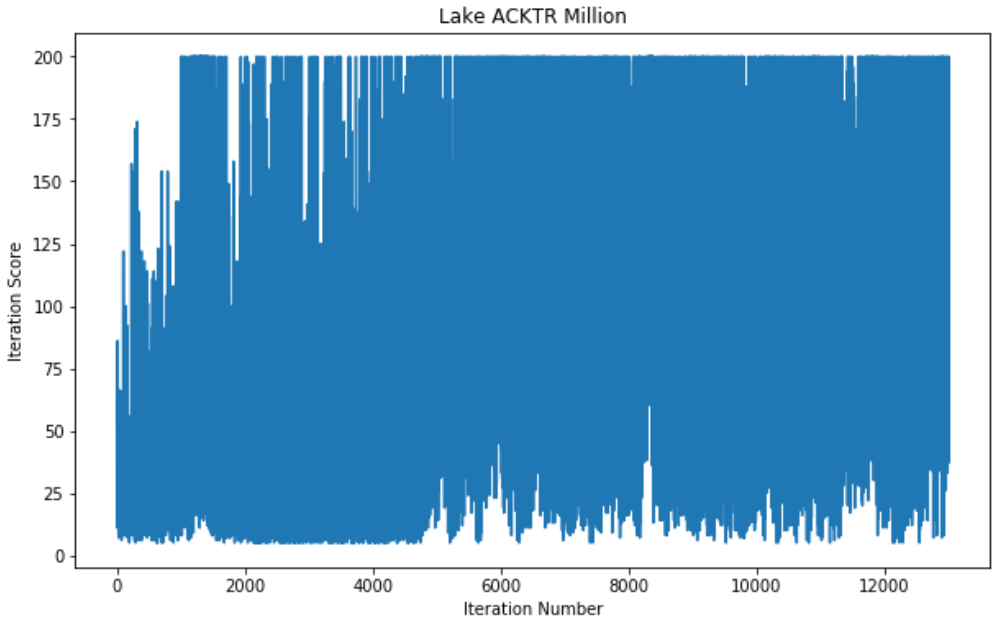
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [62]:
```
# LAKE ACKTR MILLION
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_acktr_million.csv")
lake_acktr_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_da
ta.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_acktr_million_df.index.values)
y = pd.to_numeric(lake_acktr_million_df.l.values)
ax.set_title("Lake ACKTR Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);
```

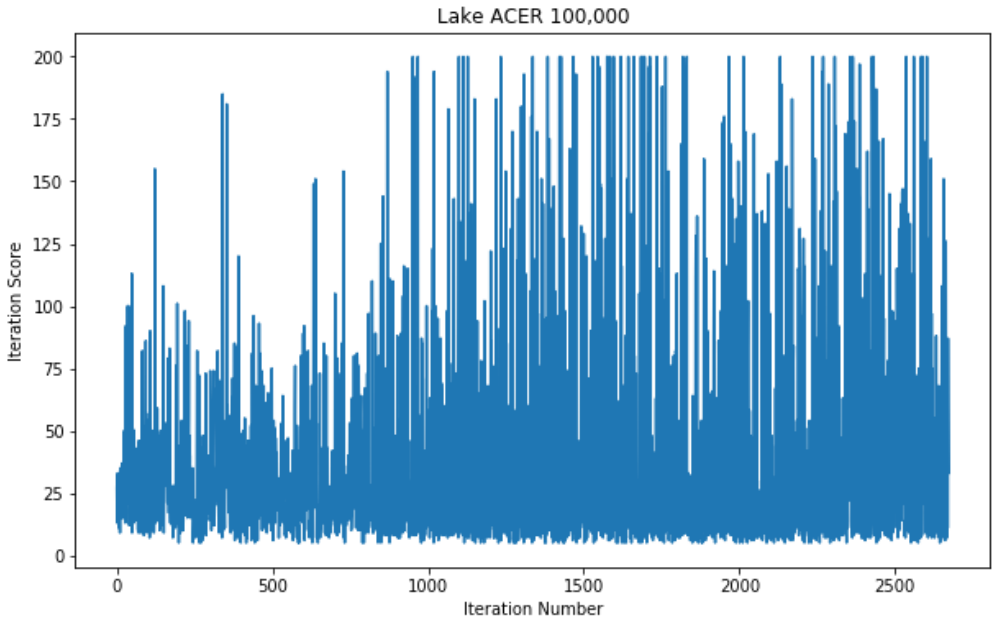
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [65]:
```
# LAKE ACER 100000
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_acer_100000.csv")
lake_acer_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data
.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_acer_100000_df.index.values)
y = pd.to_numeric(lake_acer_100000_df.l.values)
ax.set_title("Lake ACER 100,000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);
```

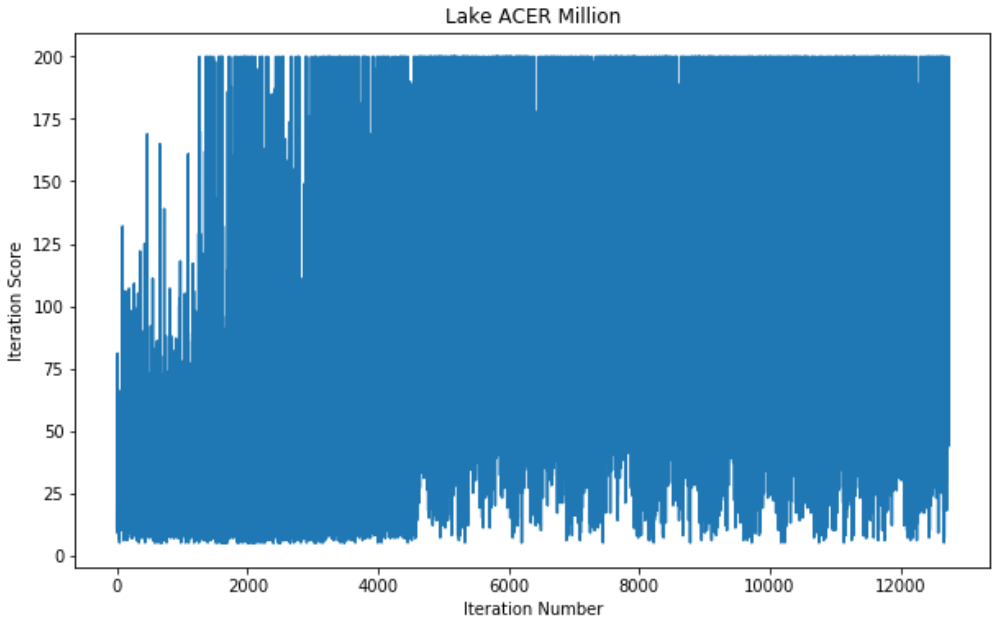
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [63]:
```
# LAKE ACER MILLION
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_acer_million.csv")
lake_acer_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_dat
a.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_acer_million_df.index.values)
y = pd.to_numeric(lake_acer_million_df.l.values)
ax.set_title("Lake ACER Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);
```

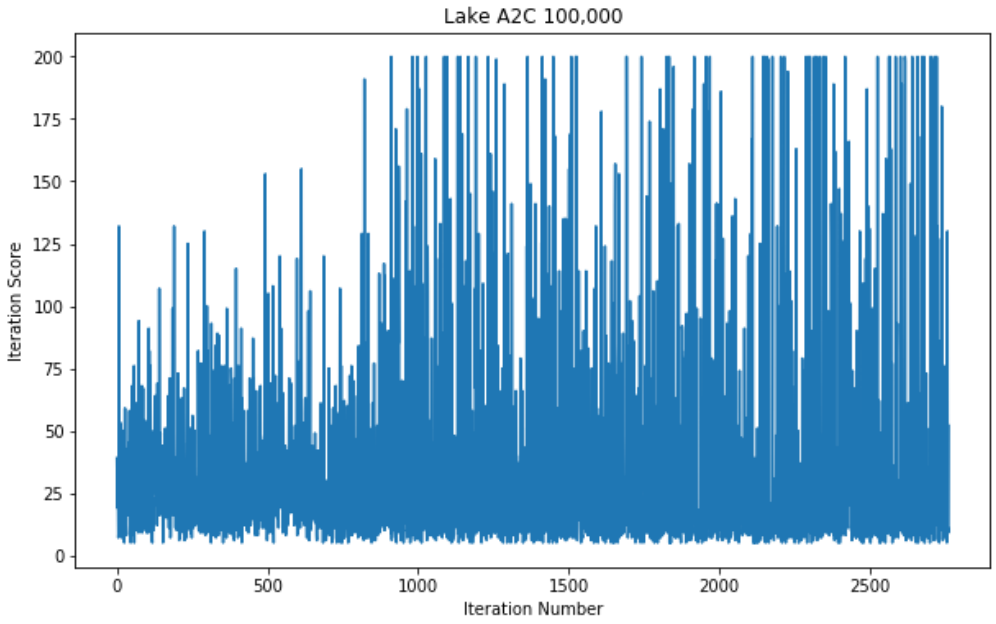
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [78]:
```
# LAKE A2C 100,000
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_a2c_100000.csv")
lake_a2c_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data.
iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_a2c_100000_df.index.values)
y = pd.to_numeric(lake_a2c_100000_df.l.values)
ax.set_title("Lake A2C 100,000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);
```

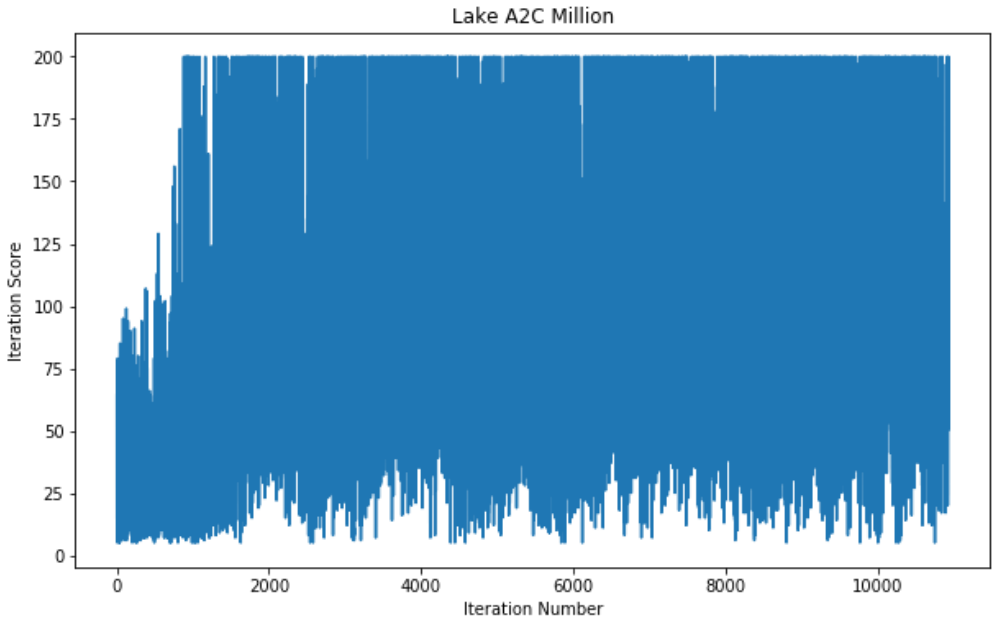
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [79]:
```
# LAKE A2C MILLION
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_a2c_million.csv")
lake_a2c_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data
.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_a2c_million_df.index.values)
y = pd.to_numeric(lake_a2c_million_df.l.values)
ax.set_title("Lake A2C Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);
```

```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [ ]: