A simple matrix multiplication example:

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// UPC Matrix multiplication Example
// a(N, P) is multiplied by b(P, M).  Result is stored in c(N, M)
// Matrix a is distributed by rows while matrix b is distributed by columns.
// We do use the upc_forall construct in this example

#include<upc.h>
#include<upc_strict.h>

#define N 4
#define P 4
#define M 4

shared [N*P /THREADS] int a[N][P] , c[N][M];
shared int b[P][M] ;

void main(void) {

  int i,j,l;

// Array initialization   by thread 0

if(MYTHREAD==0) {
                  for(i=0;i<N;i++)
                     for(j=0;j<P;j++) a[i][j] = i * j ;

                  for(i=0;i<P;i++)
                     for(j=0;j<M;j++) b[i][j] = i * N +j ;
}

upc_barrier;

// all threads  perform matrix multiplication

upc_forall(i=0;i<N;i++;&a[i][0])
  // &a[i][0] specifies that this iteration will be executed by the thread
that has affinity to
//  element a[i][0]
         for (j=0; j<M; j++) {
            c[i][j] = 0;
            for(l=0; l< P; l++) c[i][j] +=a[i][l]*b[l][j];
         }

upc_barrier;

//  thread 0 displays results
if(MYTHREAD==0) {
        printf("\n\n");
        for(i=0;i<N;i++)
           for(j=0;j<M;j++)
            printf("c[%d][%d]=%d\n",i,j,c[i][j]);
  }
}
```