Minutes
UCIME Group Meeting
April 13, 2001

***** Important Dates and Announcements:**

1. The next UCIME group meeting will be **May 25, 2001 at 10:00 a.m.** in Keith's Office.
2. Students interested in going to LANL this summer need to send Tim their tentative itinerary so that he can coordinate with Steen. This needs to be done as soon as possible.

A. **Update Reports from each team member:**

1. **Helen:**

- She has nothing particular to report, except that she continues to work on various papers.

2. **Tim:**

- He has been helping Jeannette with the Gigalopolis web page, which is very close to being ready to be posted. Within a week or two, it should be online. Keith will be passing on all ppt presentations of the model for public review.
- He continues to build data layers for the Carpinteria Creek Watershed, which is the test site for linkage with SLEUTH.
- He also has been revisiting various watershed models (PRMS/USGS-MMS, HSPF/EPA-Basins and HEC-HMS/USACE) and this term he will be working on implementing the models on Carpinteria Creek.
- Earlier today, Tim organized a Watershed Support Group (www.bren.ucsb.edu/wsg) Brown Bag where an ESRI representative came and presented the HydroArc Model, as well as GeoDatabases and the Watershed Consortium. The idea was to learn about the new tools ESRI is developing for hydrologic/watershed analysts. Although the tools will be helpful, it doesn't appear to be as dynamic as hoped. RiverTools continues to be a better option.
- He has begun a step by step approach to linking hydrologic parameters with SLEUTH and the Deltatron model. By working with Keith and Jeannette he hopes to do preliminary integration variable by variable that will give us the experience needed to do a full-scale coupling effort between hydrologic/watershed and urban growth models. Examples of this idea would be to create a stream coverage with buffered rivers, representing riparian and/or set-back areas. This would be included in the exclusion layer. A similar concept could be applied to recharge areas where you want low-density growth or no growth what so ever.
- He continues to sample creeks in the Carpinteria area as well as work with citizenry groups to build understanding of the region and become a player in the preservation efforts in the watershed.
- An update on the grant that he submitted last month: there are two parts to the evaluations. First there was a screening on campus where 5 proposals from each of the UC campuses will then compete on a UC system scale. His proposal was one of the 5 selected for UCSB and there appears to be a good bit of money in the funding initiative. Hence things are looking good on that note.
- Tim will be coordinating with Steen the student summer trips to LANL.

3. **Noah:**

- Part of his PhD work will be to look at the evacuee web page in Santa Fe regarding the Los Alamos fire. He has two maps of where people were accessing the page and when. This will be something that he will be worked on over the summer with Steen.
- He continues to do modeling here in Santa Barbara. At the moment this is oriented towards getting Version 3.0 working with good reliable data (registration, complete coverage, slope, etc). This includes using the urban boundary from 1998 where we can burn through the historical data. He has finished the new and more detailed historical road data.
- As soon as possible he needs an account on "Hammer" from Mark, the code compiling in parallel format (which is coming) from Jeannette and from Melissa the 1998 binary urban layer, i.e. the urban extent. The later will have a lookup table that will facilitate with the 1997 data creating a binary urban layer for that year.
- He was accepted to the Santa Fe Institute's "Complex Systems Summer School" program. He will be

the second student from UCSB to ever attend that program. Congratulations (June through July). There is another program in Budapest with similar characteristics that maybe more suited to his interests and he has yet to hear from them. The final decision is still up in the air. He will be going to LANL before or afterwards if Santa Fe is a reality for the summer.

- Noah will be doing some simple testing of the model with road sensitivity (how the model responds to different road layers); more and/or diffusive growth.
- He helped Keith last week on the presentation he gave at GIS-T in Washington.
- Work has just begun on looking at what types of landuse layers can be expected from a predicted growth scenario. This is work that he will be doing with Jeannette.
- Keith requested a few pages of write up on the Shoot Out so that he can write an NSF proposal to help fund the effort. That proposal is due soon.
- Noah requested a meeting with Keith regarding calibration runs.

4. Melissa:

- She continues to work on the landuse layers. The 1986 layer is just about finished. 1987 and 1976 are coming next. Maybe she can work on this over the summer as Keith mentioned that there might be funding available.

5. **Jeroen Aerts:**

- Jeroen is from the Netherlands and works there at the Engineering Company that deals with projects in resource allocations, particularly in water research management. His specific job there is to develop spatially distributed decision support systems (hydrologic modeling, PC Raster). He began working on a dissertation topic a year ago in these areas of research and now he is a visiting researcher here at the NCGIA this year. He hopes to write 4 articles that will be patched together for his dissertation. The first two are on optimization of land allocations, minimizing the costs of redevelopment. They have been submitted for review. The third article will be on uncertainty within these land allocations. And the fourth paper will be on visualization of the outputs where he will be using Keith's urban growth model to assist in this process, putting various output scenarios on the internet for broad-based evaluation.
- He showed us some interesting 3d images of the South Coast (UCSB and Bishop Ranch) as well as various images from his preliminary results regarding visualization. The final product described will be an animation of confidence levels (50-90%).

6. **Xiaohang:**

- She has been working on a couple of papers, one for NCGIA and another with Keith on model calibration and validation.
- Steen wants her to head out to LANL for the later part of this month so that they can work on their model as well as help them write a paper on the developed model.
- She is moving towards the model comparison (SLEUTH and CUF) part of her dissertation work, and will be talking with Melissa for data. This will include a look at multinomial-logic model from Landis.

7. **Jeannette:**

- She is buying a house and this afternoon is participating in the house inspection.
- She went to Menlo Park for a presentation on all of their research with a lot of the management people from the Survey. It was somewhat successful.
- She has been wrapping up the Gigalopolis web page, which will be ready soon with the new release and documentation on it. The URL will be the same as before.
- MPI, the parallel interface, got up and running this week to inter-link numerous CPUs, particularly in the Descartes Lab. This will speed up our throughput (model runs) by at least 20 times. It uses some software from Purdue University called LANBoot that coordinates the simultaneous use of all the CPUs in the host-listed. This means that we are now able to run calibrations, which will be helpful for Jeannette's dissertation topic.

8. **Keith:**

- He spoke with John Landis last week and it appears that he is working on another model, which couples in biological responses. He seems to be moving on from the CUF model into other things.

- Keith has been working on building a bridge with the UCSB Economic Forecasting Project in the Economics Department. He will be presenting our efforts at their annual event at the Lobero Theatre next week.
- The Santa Barbara planning and decision making work is moving ahead leaps and bounds. The "See the Future" model is just about finished. Jeff has been putting the finishing touches on the model. Ryan Abry has been crafting the presentation of the model, which is designed for the lay people to understand and be able to ask questions. The presentation was tested out last Monday at a gathering of "Mickey's Living Room" group and on Wednesday evening on a joint meeting of council members from the Cities of Santa Barbara and Carpinteria (that was covered by the Santa Barbara News-Press). The message here is that our subsequent meetings will be attended by more and more people and that the UCIME work will get more attention as time goes on.
- There is about a half a million dollars through the IGERT (Integrated Graduate Education Research Training) program to support graduate students throughout their PhD, i.e. for 4-5 years everything included. This would be for incoming students, hence you can not apply if you have already started. The goal here is for Keith to apply for funding to create at UCSB through Geography an "Institute for the Study of Smart Growth" that pulls in people at the university working on integrated modeling, Smart Growth, computational simulations, etc. Although we do not have a Planning Department we do have modeling and GIS expertise and we could put a Green Building spin on it as well. IGERT would be Part I and the second part would be to work with Jack Dangermond and some of the funding he provides to create the "UCSB Institute of Smart Growth". This is something that might be possible in a couple of years.

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