### LOGIC MODEL: NEW FACULTY DEVELOPMENT: BIOINFORMATIST (11-22-08)

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Strategies</th>
<th>Outputs</th>
<th>Outcomes</th>
<th>Impacts (Long Term-Conditions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMI funding ($1 million)</td>
<td>Search for Assistant Professor of BIO (2009-10)</td>
<td>Successful Hiring</td>
<td>Successful 1st year evaluation</td>
<td>Tenure/Productivity</td>
</tr>
<tr>
<td>Institutional funding</td>
<td>- Ad &amp; Position Description Developed (Spring 2009)</td>
<td>- Instructional Activities 09-10 (Spring 2009)</td>
<td>- Self-evaluation</td>
<td></td>
</tr>
<tr>
<td>Hiring</td>
<td>- Posted (September 2009)</td>
<td>- # New Lab Exercises in existing courses—Bioinf LEM</td>
<td>- Mentors' evaluation</td>
<td></td>
</tr>
<tr>
<td>Benefits</td>
<td>- Applications (Fall 2009)</td>
<td>- # New Interdisciplinary &amp; Bioinformatics courses</td>
<td>- Course evaluation</td>
<td></td>
</tr>
<tr>
<td>Start up</td>
<td>- Interviews (January 2010)</td>
<td>- Curricular presentations at meetings—internal &amp; external</td>
<td>- Chair evaluation— including classroom visits</td>
<td></td>
</tr>
<tr>
<td>Continuation after YR 4</td>
<td>- Agreement of Startup funds</td>
<td>- Bioinformatics Laboratory Setup</td>
<td>- Meeting with chair/mentors</td>
<td></td>
</tr>
<tr>
<td>Res &amp; Curriculum development support</td>
<td>Facilities and Resources</td>
<td>- Scholarship</td>
<td>- Revisions</td>
<td></td>
</tr>
<tr>
<td>o Half teaching release for Program Director</td>
<td>- Dieter-Porter Life Science Building Renovation (planned for 2010-11)</td>
<td>- Res projects with independent studies (#, gender, demographics)</td>
<td>- Action plan for 2nd year; goals beyond</td>
<td></td>
</tr>
<tr>
<td>o Other External Funding</td>
<td>- KISK Grant Proposal (02-08) for equipment ($200K)</td>
<td>- Faculty/Student collab</td>
<td>- Instructional/curriculum</td>
<td></td>
</tr>
<tr>
<td>Facilities and Physical Resources (e.g., Dieter-Porter renovation),</td>
<td>- Concurrent support/training existing faculty</td>
<td>- Publications</td>
<td>- Integration of Math in Biology Courses</td>
<td></td>
</tr>
<tr>
<td>startup equipment, maintenance service agreements</td>
<td>o Dioc Bioinformatics</td>
<td>- LEM added interdisciplinary projects</td>
<td>- Greater Collaboration</td>
<td></td>
</tr>
<tr>
<td>Departmental/Program</td>
<td>o GCAT—YR 1-2</td>
<td>- New off-campus</td>
<td>- Scholarship/Research/Internal &amp; External Review</td>
<td></td>
</tr>
<tr>
<td>o Infrastructure &amp; resources</td>
<td>- Training</td>
<td>- Internships</td>
<td>- Developing research program with students and other faculty—SURE-AY</td>
<td></td>
</tr>
<tr>
<td>o Other Faculty Mentors</td>
<td>- Supplies</td>
<td>- Faculty/res. Collab</td>
<td>survey, CURE surveys</td>
<td></td>
</tr>
<tr>
<td>- Chair of Biology</td>
<td>- Curriculum development</td>
<td>- Grants</td>
<td>- LEM development molecular organismal interface</td>
<td></td>
</tr>
<tr>
<td>o Other Faculty Mentors</td>
<td>o Molec Bioinformatics</td>
<td>- # students going into bioinf/comp bio res.</td>
<td>- Successful coordination with ITL for data collection</td>
<td></td>
</tr>
<tr>
<td>- BIO</td>
<td>- LEM start up</td>
<td></td>
<td>- Greater Collaboration</td>
<td></td>
</tr>
<tr>
<td>- ITL</td>
<td>- Equip purchase — YR 1-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Program Director and other Faculty/Staff</td>
<td>- Program develop — YR 1-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Knowledge, skills, experience</td>
<td>- Postdoc in ITL—YR 2-3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Supplies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Curriculum development</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Conditions
- Sustainable integration of bioinformatics with ITL and MTH
- Greater collaboration and interdisciplinary culture of LEM & Bioinformatics
- Altered Biology, Science, & ITL curriculum and teaching

### Outcomes
- Tenure/Productivity
- Curriculum Assessment and possible realignment
- Bioinformatics faculty-student Research Program Implemented
  - Incr W&J students going into bioinformatics
  - LEM network
  - LEM symposium
  - LEM database

### Impacts (Long Term-Conditions)
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- (Development of W&J Web Assessment Tool for Tracking)
- Global connections for LEM databases
### EVALUATION FRAMEWORK: NEW FACULTY DEVELOPMENT: BIOINFORMATIST (11-22-08)

<table>
<thead>
<tr>
<th>Evaluation Questions for OUTCOMES (What We Want to Know?)</th>
<th>Possible Indicators/Measures (How We'll Know?)</th>
<th>Possible Data Collection Methods and Information Sources (From Whom? How?)</th>
<th>Rank/Priority (include brief rationale)</th>
</tr>
</thead>
</table>
| • Are the curricular changes in bioinformatics the faculty member implements effective? | • 1st year faculty evaluation conducted, 2nd year plan developed | • Observations of teaching (chair, mentors) | • Instructional  
  o Class & lab visits  
  o Interviews with students  
  o Other colleagues eval also  
  o Student course eval  
  o SURE-AY |
| • Is the faculty member developing a student-based research program in bioinformatics? | • Students understand bioinformatics  
  o Performance on exams  
  o # new courses  
  o Enrollments in select courses  
  o Revised and new courses  
  o # lectures in other courses | • Course Surveys/Questionnaires  
  • Course evaluations  
  • Annual Faculty Information Form  
  • Annual review by chair  
  • Review by mentors  
  • Evaluation of 2nd year plan by chair and mentors  
  • Assessment tests (GRE, MFT in Biology)  
  • Grades  
  • Registration Data/Students taking 2nd course in area (Registrar)  
  • Tracking graduates  
  o Senior exit surveys  
  o 1st year out (Alumni Affairs helps)  
  o 5 years out (Alumni Affairs helps)  
  • Surveys (SURE, SURE-AY, CURE) (from students)  
  • HHMI Annual Program Reports  
  • Departmental Annual Reports (Biology, Information Technology Leadership, Mathematics, Environmental Studies)  
  • Development of W&J Web assessment tool for tracking | • Scholarship  
 • Service |
| • Is the faculty member providing service to the Biology Department, the Natural Sciences and Mathematics Division, the College and the Community? | • Faculty member develops active research program  
  o # faculty/student research collaborations  
  o # publications with students and other faculty  
  o # grants/grant proposals  
  o # presentations (faculty/student)  
  ▪ Meetings  
  ▪ On-campus colloquia  
  o Review of manuscripts  
  o # collaboration with colleagues  
  o Student perception (attitude) surveys  
  o Peer interactions  
  o # students going into bioinformatics/computational biology  
  o # Web journal publications with students and colleagues | • Surveys  
  • SURE-AY  
  • CURE (from students)  
  • Annual review by chair  
  • Review by mentors  
  • Evaluation of 2nd year plan by chair and mentors  
  • Assessment tests (GRE, MFT in Biology)  
  • Grades  
  • Registration Data/Students taking 2nd course in area (Registrar)  
  • Tracking graduates  
  o Senior exit surveys  
  o 1st year out (Alumni Affairs helps)  
  o 5 years out (Alumni Affairs helps)  
  • Surveys (SURE, SURE-AY, CURE) (from students)  
  • HHMI Annual Program Reports  
  • Departmental Annual Reports (Biology, Information Technology Leadership, Mathematics, Environmental Studies)  
  • Development of W&J Web assessment tool for tracking | Rationale: These criteria are based on the guidelines for faculty evaluation at Washington and Jefferson College. |