KECK GRADUATE INSTITUTE

of

Applied Life Sciences

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Founded 1997

7th Member Institution of
Consortium of the Claremont Colleges

Background

- Spearheaded Engr. Management masters at Stanford in about 1980
- Harvey Mudd College adds biology
- Emphasis: Infuse across curriculum
- Claremont Consortium: add a college

Key Assumptions

* Engineers = Applied physicists

- Multi-disciplinary programs are difficult to launch in traditional universities
  - Borrowed faculty with weak commitment
- PhD training inappropriate for many positions in bioscience companies

Advantages of a New Venture

- Focus (faculty motivation)
- “Clean Sheet” -- both faculty and curriculum
- No institutional “turf” wars
- Claremont Consortium (infrastructure and colleagues in place)
- Start-up funding: $70 million
- Founding entrepreneur available

Challenges -- Foreseen and Encountered

- Student recruitment
  - Bias of faculty advisors
  - New institution (but at Claremont)
  - Reaching potential students in industry
- Hostility of traditional faculty
- Financial aid (tuition discount)
- Placement of graduates (early classes)
  - “PhD cultures” in industry
- Faculty pressure for a PhD program
- Geographic location
- Fundraising

Challenges -- Foreseen but not Real

- Mix of faculty: academic and industry
- Students with a variety of undergrad majors
  - Use of “ramp-up courses
  - Age distribution of students
- Hiring without faculty tenure
- Constructing new facilities (instead we purchased a former J&J facility)
- Enthusiasm of students and alumni
- Accreditation

SOME LESSONS

- Don’t trust market research
- Design curriculum from scratch (not a selection from existing course offerings)
  - Team teaching
- Importance of external advisory council -- “luminaries” for endorsement & validation; evolve to mid-/upper-level executives
- Emphasize:
  - Teamwork, communication
  - Projects -- Initial project and capstone project
  - Leadership, entrepreneurship
- An administrative/faculty champion is key

Some KGI-unique Courses

- Systems biology
- Computational biology
- Bioprocessing
- Pharmaceutical discovery
- Medical diagnostics
- Regulation and clinical trials
- Automation and robotics
- Bioethics
- Managing intellectual property
- Bioscience business strategy

KGI Today

- Two-year program
- MBS (Master of Bioscience) degree
- 100-120 enrolled students
- 20 faculty; significant funded research
- Curriculum
  - 2/3 science/engr. -1/3 management/ethics
- Internship
- Team Masters Project (TMP)
- Largest employer (Amgen): 20 %
- Student mix: 40% women; 30+% internat'l

Challenges Ahead

- Achieve critical mass and fiscal breakeven (tuition revenue and fundraising)
  - Donor constituency is very limited
  - Reduce tuition discounting
- Implement remote and asynchronous learning/teaching to serve part-time students
- Improve integration of science/engr and management/ethics curricula
- Achieve mutual leverage: PhD and MBS

Challenges Ahead (cont'd)

- Continue to innovate; avoid typical academic conservatism
  - Pedagogy
  - Enhance emphasis on leadership
  - Manage intellectual property
  - Encourage constructive faculty turnover
  - Avoid drifting into de facto faculty tenure
- Deepen and strengthen KGI's mission and core values