

Professional Master's Degree Programs at Penn State

October 2, 2003

**Don Genson, director Sloan Master's Programs,
Eberly College of Science, Penn State**

dwg9@psu.edu

Three Very Different Programs

Master's in Biotechnology

Master's in Applied Statistics

Master's in Bioanalytical Chemistry –
proteomics

Common Issues

Description, Current Status,
Development, Future Prospects

Different Programs but Common Issues

- Culture clash
- Firewall construction
- New resources
- Students paying tuition hurdle

Different Programs; Common Issues

- Culture clash
 - Education and placement versus research
 - Corporations versus publication

Different Programs; Common Issues

- Firewall construction
 - Neither students nor grant resource flow to Ph.D. programs
 - Balance of interdependence is critical
 - Multiple reasons not grant nor tuition revenue alone

Different Programs; Common Issues

New resources

- Department deal breaker
- Tough negotiations with Provost
 - Financial support in place
- Connection to pedagogical design
 - Revenue potential

Different Programs; Common Issues

- **Students paying tuition hurdle**
 - **Essential component, see resources**
 - **Especially true for domestic students**
 - **5 year dual degree programs may be possible**

Master's in Biotechnology

www.lsc.psu.edu/ms.html

Broad education and training in:

- Scientific principles underlying biotech advances
- Laboratory techniques in biotech R&D
- Business skills including bioentrepreneurship
- Ethical and social issues in biotech developments

With an innovative, hands-on, multi-disciplinary learning approach

Seven core course including research project, preferably off-campus

Master's in Biotechnology

Currently full – 25 students total

Domestic students including PSU grads

100% placement – two classes

Biotechnology workshops drove
undergraduate degree, graduate lab
skills drove master's program

Master's in Biotechnology

Future looks much like present

Expansion done in blocks of 12 or 15
because of lab courses and is unlikely

More informal connections with
corporate types

Master's in Applied Statistics

www.stat.psu.edu/grad/degrees/MAS/index.html

Professional degree provides training to develop data analysis skills and explore all core areas of applied statistics.

Graduates acquire broad knowledge in wide range of application areas with employable skills

Master's in Applied Statistics

Quantitatively oriented undergraduates with bachelors' degrees in ag, biology, computers, engineering, mathematics, and physical or social sciences.

Professionals who handle data in current positions and are interested in practical side of statistics.

Master's in Applied Statistics

Original idea, pre-Sloan, was for an on-line program

Academic approval was easier and faculty support higher for resident program

Consulting Center in place, alumni support for department

Master's in Applied Statistics

Future includes more domestic students

Placement issues dramatically easier

Consider on-line certificate and master's degree programs

Consulting Center as revenue generator

Master's in Bioanalytical Chemistry

Program Goals

- Increase breadth of knowledge and enhance problem solving skills
- Curriculum is innovative, forward looking, and flexible
- Integration of chemistry and biotechnology with access to modern high-throughput analytical laboratory equipment to teach problem solving

Master's in Bioanalytical Chemistry

Degree Requirements

One semester or summer internship

New modular, intensive courses

biology for chemists, medicinal chemistry, proteomics, bioassays, bioinformatics, high-throughput separations, metabolomics

Additional core and elective courses

Bioanalytical Clinic – flexible course with industry sponsored problems solved with student teams

Master's in Bioanalytical Chemistry

- **Future includes launch**
- **Department approval, mass spec staff in place including proteomics**
- **Graduate School review, approval**
- **Equipment donations in place, more promised, new facilities**
- **Students to be recruited for Fall 2004**

Sloan Professional Master's Programs at Penn State

Biotechnology
Applied Statistics
Bioanalytical Chemistry

Questions?