Enhancing the Institution-wide Scholarly Community Through Multidisciplinary Faculty-Student Summer Research Programs

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Presenters

Matthew Bender Associate Professor of History

Benny Chan

Associate Professor of Chemistry Director of Faculty-Student Collaboration

Janet Morrison

Professor of Biology Past Director of Faculty-Student Collaboration

Karen Yan

Associate Professor of Mechanical Engineering





The College of New Jersey

- Primarily Undergraduate Institution (PUI)
- 6,500 well-prepared students
- Seven Liberal Arts and Professional Schools: Arts and Communication; Business; Education; Engineering; Humanities and Social Sciences; Nursing, Health and Exercise Science; Science
- "Faculty-Student Scholarly and Creative Collaborative Activity"



Benefits and Challenges of Diversifying a Summer Research Program









Benefits – for both faculty and students

- Enhancing intellectual curiosity
- Building a community of scholars
- Generating new inter-disciplinary collaborations and new research directions
- Sharing an established culture of facultystudent collaboration with nonscience/engineering faculty

Benefits – for faculty or students

- Springboard for research activities during academic year
- Student career development
 - Considering new career path/graduate school
- Broadening understanding on how research is conducted in other disciplines
 college-wide promotion committee
- Building collegiality



Challenges

- Collaboration may not be tradition
 - Development of student specific project
 - Maintaining goals and scholarly activity for 8 week program
 - Mentoring and scholarly process is different than science/engineering
 - Not all faculty value faculty-student collaboration





Challenges

- Encouraging non-sciences to apply
- Initially tiny minority of non-science
- Balancing community building and scholarly time



TCNJ's Mentored Undergraduate Summer Experience (MUSE)

- History
- Meeting the challenges
- Outcomes

Mentored Undergraduate Summer Experience



2004: Biology Summer Research Program (+ Chemistry)



19 Biology students7 Biology faculty

6 Chemistry students4 Chemistry faculty



2008 - 2012 : MUSE

Mentored Undergraduate Summer Experience

Presentations and Banquet July 29, 2011

5:30 – 7:00	View Posters
7:00	Buffet Dinner
7:35	Welcoming Remarks Dr. Janet Morrison, Director of MUSE
7:45 – 9:00	Oral Presentations
7:45	Ortler Mountain Range
	Kelsey Long & Matthew Pembleton
	Faculty Mentor: Elizabeth Mackie
8:00	Identification of Novel Motifs in Unaligned Protein Sequences Zachary Zappala; Faculty Mentor: Sudhir Nayak
8:15	Living My Dream
	Nicole Thompson; Faculty Mentor: Susan Ryan
8:30	The Rhetoric of Presidential Masculinity: Strategizing Gender in the 2008 Democratic Primary Elections
	Kevin Adams; Faculty Mentor: John Landreau
8:45	Design, Constructing, and Testing of Wearable Expression Monitoring System for Musicians Melissa Mastro & Nima Rahimi; Faculty Mentors: Brett BuSha &
	Teresa Nakra

~ 75 students ~ 50 faculty



The College of New Jersey

http://fscollab.pages.tcnj.edu/muse/

Diversity of Disciplines in MUSE

School of the Arts and Communication Art & Art History Communication Studies Interactive Multimedia Music

School of Business Economics Finance and International Business Marketing and Management

School of Education Educational Administration & Secondary Education Elementary and Early Childhood Education Special Education, Language, & Literacy

School of Engineering Biomedical Engineering Civil Engineering Electrical & Computer Engineering Mechanical Engineering Technology Studies

The Art Museum

The Library

School of Humanities and Social Sciences African-American Studies Criminology English History International Studies Philosophy, Religion, & Classical Studies Political Science Psychology Sociology & Anthropology Women's & Gender Studies World Languages

School of Nursing, Health, and Exercise Science Health & Exercise Science Nursing

School of Science Biology Chemistry Computer Science Mathematics & Statistics Physics





Meeting the Challenges

Collaboration may not be tradition

MUSE strategies :



- encouragement
- acceptance of different mentoring styles
- lunch-time workshops relevant to all disciplines
- opportunities for studentfaculty teams to present ongoing and final work





Meeting the Challenges

Encouraging non-sciences to apply

MUSE strategies :



- RFP with rubric
- School meetings and workshops
- messages from Deans
- peer-to-peer: spread the word
- make funded non-science proposals available





The College of New Jersey

REQUEST FOR PROPOSALS

Proposal Deadline: February 6, 2012 Announcement of Funding: March 16, 2012 Program Dates: June 5 - July 27, 2012

PROGRAM MISSION

The mission of the Mentored Undergraduate Summer Experience (MUSE) is to foster a vibrant campus culture of facultystudent collaboration on scholarly and creative projects. Faculty members advance their scholarship and creative activities as mentors to a select number of students who work as junior collaborators. Students benefit from a powerful learning experience, while gaining necessary preparation for graduate education and professional endeavors as apprentice practitioners. Together they enhance the scholarly community at The College of New Jersey.

The MUSE program encourages proposals from full-time, tenure-track faculty members from **all academic programs and Schools.** The program recognizes that research methods and practices differ across the disciplines. Any proposal that meaningfully includes undergraduate students in some aspect of the faculty member's scholarly program is welcome.

Faculty members and students working on externally funded collaborative projects are also invited and encouraged to participate in the MUSE program. No application is required; details on how to be included are at the end of this RFP.





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Meeting the Challenges

- Initial minority of non-science
- Balancing community building and scholarly time

<u>MUSE strategies</u> :



- : Weekly MUSE-wide lunch workshops
 - Weekly coffee break/presentations
 - Grouped housing
 - Funded evening activities









Percentage non-science/engineering MUSE projects







Outcomes

Value of the summer experience to non-science students

"Collaborating with my mentor has been extremely beneficial as philosophy research is traditionally a singular effort with peer reviewing coming after most of the research has already been done. Being able to have someone constantly available for feedback has been an invaluable experience." –Philosophy

"For the first time, my academic curiosity was channeled out of a traditional classroom, and I found great intellectual stimulation working one-on-one with my mentor. Our collaboration flourished into a full-on partnership, in which the burdens of research were shared equally and the fruits of ideas were traded freely." –Women's & Gender Studies





Outcomes

Value of cross-disciplinary interaction

"In addition to the professional and academic benefits of the program, I have had the privilege of working and socializing with other members of the MUSE community, from whom I have learned a great deal about their respective disciplines." – Special Education, Language, & Literacy

"During my research, I needed help from a variety of resources, including a Music professor who helped me with audio analysis. I now appreciate how two fields widely considered to be very different can intertwine and be useful to another." – Mechanical Engineering

"One of the central goals of MUSE is to build community between disciplines, and to that end the program undeniably succeeded. I am now conversant in everything from quantum mechanics to ancient art, and in the process I made good friends and lifelong memories. Thank you, MUSE, for an unforgettable summer experience." -- English





Outcomes

- Interdisciplinary research
 - Computer Science-Journalism-Interactive Multimedia
 - Education-History
 - Engineering-Music
 - Library-Computer Science



Break-out groups – 20 minutes

- I. Discuss challenges at your institutions for diversifying a summer research program.
- 2. Discuss strategies to meet those challenges.
- 3. Create a list of paired challenges and strategies.

Whole-group discussion – 20 minutes

