PITFALLS AND DRAWBACKS OF ENGAGING JUNIOR FACULTY IN INTERACTIVE EDUCATION AND OUTREACH ACTIVITIES

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PITFALLS AND DRAWBACKS OF ENGAGING JUNIOR FACULTY IN INTERACTIVE EDUCATION AND OUTREACH ACTIVITIES

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ADDITIONAL CONTRIBUTORS

• Prof. Raychelle Burks, St. Edward’s University
• Prof. Nicole Gugliucci, St. Anselm College
• Prof. Sarah Hörst, Johns Hopkins University
• Introduction
• Unsuccessful Efforts
  • UH USIP
  • Mars Rover Celebration
• Success Stories
  • Prof. Nicole Gugliucci, St. Amselm’s College
  • Prof. Sarah Hörst, Johns Hopkins University
  • Prof. Raychelle Burks, St. Edwards University
• Conclusions
INTRODUCTION

What am I going to say?
OUTREACH AND JUNIOR FACULTY

• “Education and Outreach” means K-12 and Public in this talk
• Junior Faculty are needed in this effort
• Most Junior Faculty want to do outreach and science communication
• In doing so, they often risk their tenure prospects
• This talk will offer examples, without preaching
UNSUCCESSFUL EFFORTS

Mistakes Were Made
UH UNDERGRADUATE STUDENT INSTRUMENTATION PROGRAM (UH USIP)

• Class is a two year program.
• Teaches undergraduates to build spacecraft through inquiry based learning
• Teaching load is intense. Teaching USIP should count as a full course
• First time, we ran at 4:1 Student:Teacher Ratio
• One of the Engineering Team Left, Recruited 4 Juniors as Replacements
• EPIC FAIL
  • Departments would not assign courses (despite having signed proposal)
  • Junior Faculty who signed up expected monthly drop-ins, instead of
  • Requirement of 10 hours proactively mentoring in the lab.
  • Turned into inactive resume padders

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10/25/2017
Teacher – intensive inquiry based learning classes require a-priori buy in from
  • College
  • Department
  • Promotion and Tenure Committees
    • Written Standards Revision
MARS ROVER MODEL CELEBRATION

• Two Part Program
  • 15 lesson, 6 week, NASA approved, standards aligned curriculum
    • Grades 3-8
    • Inquiry based project centered space science curriculum
  • Capstone city-wide day long competition at UH
    • Who built the best model?
    • 39 School Districts, 55 Schools, 700-800 Students
MARS ROVER MODEL CELEBRATION

- I ran the program for 15 years.
- Tried to recruit my replacement for last 8 years
- Engaged 3 junior faculty
  - Science Curriculum Specialist
  - Two educational psychologists
- They all fled after ~ 2 years average
  - It took too much time away from pursuit of tenure.
  - Did not count toward approved service
- Finally, UH established a STEM Center, w Senior Faculty Director
  - And I fled…bc USIP was impossible load with this too
SUCCESS STORIES
Junior Faculty who are making a difference
THE EXEMPLARS

- Prof. Raychelle Burks, St. Edward’s University
- Prof. Nicole Gugliucci, St. Anselm College
- Prof. Sarah Hörst, Johns Hopkins University
Dr. Raychelle Burks
Assistant Professor of Chemistry

Chemistry World
#TraceAnalysis

Scholarship

SciPop Talks!

Teaching

Service
TWO RESEARCH PLANS

Lab Work (ie Science)
- Analytic chemist
- Specializes in Forensics
  - Actual research
- Chemistry World column

Informal Science Education
- SciPop Talks!
- @DrRubidium

Professional Service
- DIYScience at GeekGirlCon
- Outrageous Acts of Science
PROJECT PLANNING

• Projects must hit both professional and personal targets
• Need teammates and mentors to help find them
• Service should be minimized unless “research-ized”
  • Data driven with publications
• Need supportive management
• Revised P&T Criteria
NICOLE GUGLIUCCI
@NOISYASTRONOMER

- Radio Astronomer
- Mostly Ad hoc
  - Star parties
  - Speaking to local groups
- Joined pro-outreach Department
- College is committed to Community Service
- Science Outreach Coupled to Community Service is Particularly Valued
SARAH HÖRST

- Lead Organizer, Teacher Training Workshops at DPS Annual Meeting
- Major Public Presentations (8)
  - Adler After Dark “Planetary Prom”
- K-12 Presentations (~1/year)
- Press Interviews
- Social Media
  - @PlanetDr. (~29000 followers)
SARAH HÖRST

• Active, successful researcher
• Won ~$1.4M in grants since starting on Faculty in 2014
• One Postdoc, 6 Graduate Students
• 21 Publications

• Has no arrangement for counting outreach in any special way at tenure time
CONCLUSIONS

• Setting up to make it easy for junior faculty to step into ongoing projects tends not to work
• It helps to have a pro-outreach Department
• Have an approved plan
• Organize grant-generating, publishing outreach programs
• Or meet your mainline obligations with enough time leftover to do outreach