Creating an Institutional Culture of Research

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Requires Contributions From:

- Individuals
- Departments
- Institution

Undergraduate Research Summit
http://www.bates.edu/x50817.xml

- Examine issues involved in undertaking and sustaining chemistry research at predominantly undergraduate institutions (PUIs)
- Provide recommendations on how to enhance the amount, quality, productivity, and visibility of research at PUIs

Undergraduate research is an inquiry or investigation conducted by an undergraduate that makes an original intellectual or creative contribution to the discipline

- Original

  -High level of proof

  -Better learning experience

- Contribution to the discipline

  -Publications in peer-reviewed journals

Individual Faculty Members

- Don’t attend seminars by visitors
  - Spend the time doing your scholarly work
- Write grant proposals
  - Proposal writing workshops – CUR
- Establish a summer research program

Generating Ideas for Research: Low-risk Peer Review

- Attend smaller specialty conferences
- Network with faculty members from local PUIs
- External speakers in your area of work
  - Structure speaker program for faculty, not students
- CUR mentor network
- Sabbatical leaves

Develop Collaborations

- Source of ideas/projects
- Source of infrastructure/expertise/funds
- Source of motivation
- Department/Institution attitude toward collaborations?

Departmental Activities to Promote Research

- Design a research-supportive curriculum
  - Infused with inquiry-based activities
  - Encourages students to conduct research by (1) awarding credit for participation in research and (2) leaving time for students to participate in research

Education is what's left over after you've forgotten everything that you learned.

-Anonymous

Learning Outcomes

Ewell, P.T., *Accreditation and Student Learning Outcomes: A Proposed Point of Departure*, Council for Higher Education Accreditation (CHEA) Occasional Paper, Washington, DC, September 2001

Knowledge outcomes – "..particular areas of disciplinary or professional content that students can recall, relate, and appropriately deploy."

Skills outcomes – "the learned capacity to do something – for example, think critically, communicate effectively, productively collaborate, or perform particular technical procedures – as either an end in itself or as a prerequisite for further development

Affective Outcomes – "..usually involve changes in beliefs or in the development of particular values, for example, empathy, ethical behavior, self respect, or respect for others."

Learned abilities – "..typically involve the integration of knowledge, skills, and attitudes in complex ways that require multiple elements of learning. Examples embrace leadership, teamwork, effective problem-solving, and reflective practice"

Restructuring the Curriculum

- Alternate years that courses are offered
- Column A or B requirements
- Have larger sections, more group work

- In the sciences:
  - Every course does not need a lab
  - Every sub-field does not need a lab
  - Substitute research experiences for course experiences
  - Offer a fewer number of integrated labs
  - Perhaps not all required
- Do research in instructional labs/courses

Department Scheduling Creating Blocks of Time

- Teach courses fewer days of the week
- Teach courses at times of the day that create blocks of time for research
- Have uneven semester teaching loads – one heavier, one lighter – coordinate with your research schedule
- Teach multiple sections of the same course or lab to reduce number of preps

- If a course rotates, set up a schedule so that a person teaches it in consecutive years
- Create team-teaching arrangements that free up part of a semester
- Question long-standing practices in a effort to avoid fragmentation of your time

What does this require?

- That scholarly work is prioritized when teaching schedules are set
- That departments have effective communication so that people can express their interests and needs

- A departmental and institutional culture that says its okay, within certain bounds, to close one's door to work on scholarly activities

- A departmental and institutional culture in which scholarly work and teaching are not seen as competitive activities but as integrated activities

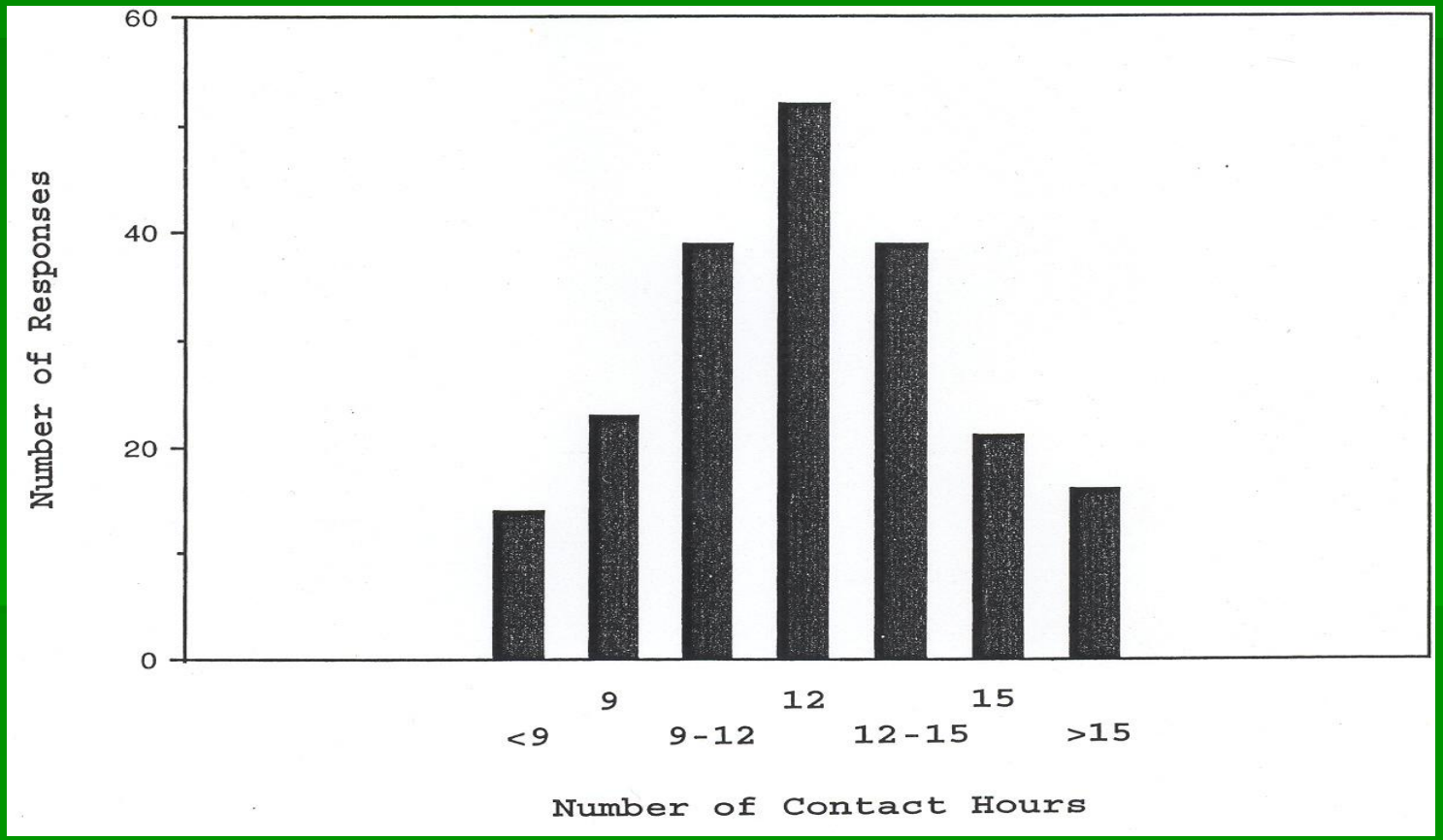
Institutional Activities

- Start-up funds
- Internal research awards
- Support for summer student stipends
- Travel support for conferences
- Funds for instrument maintenance
- Access to electronic journals, searchable literature databases, other IT

More Institutional Activities

- Sponsored Research Office
  - Sessions on proposal writing
  - Promotion of successful grants
- Celebration of undergraduate research
- Promote success of faculty and student scholarly work

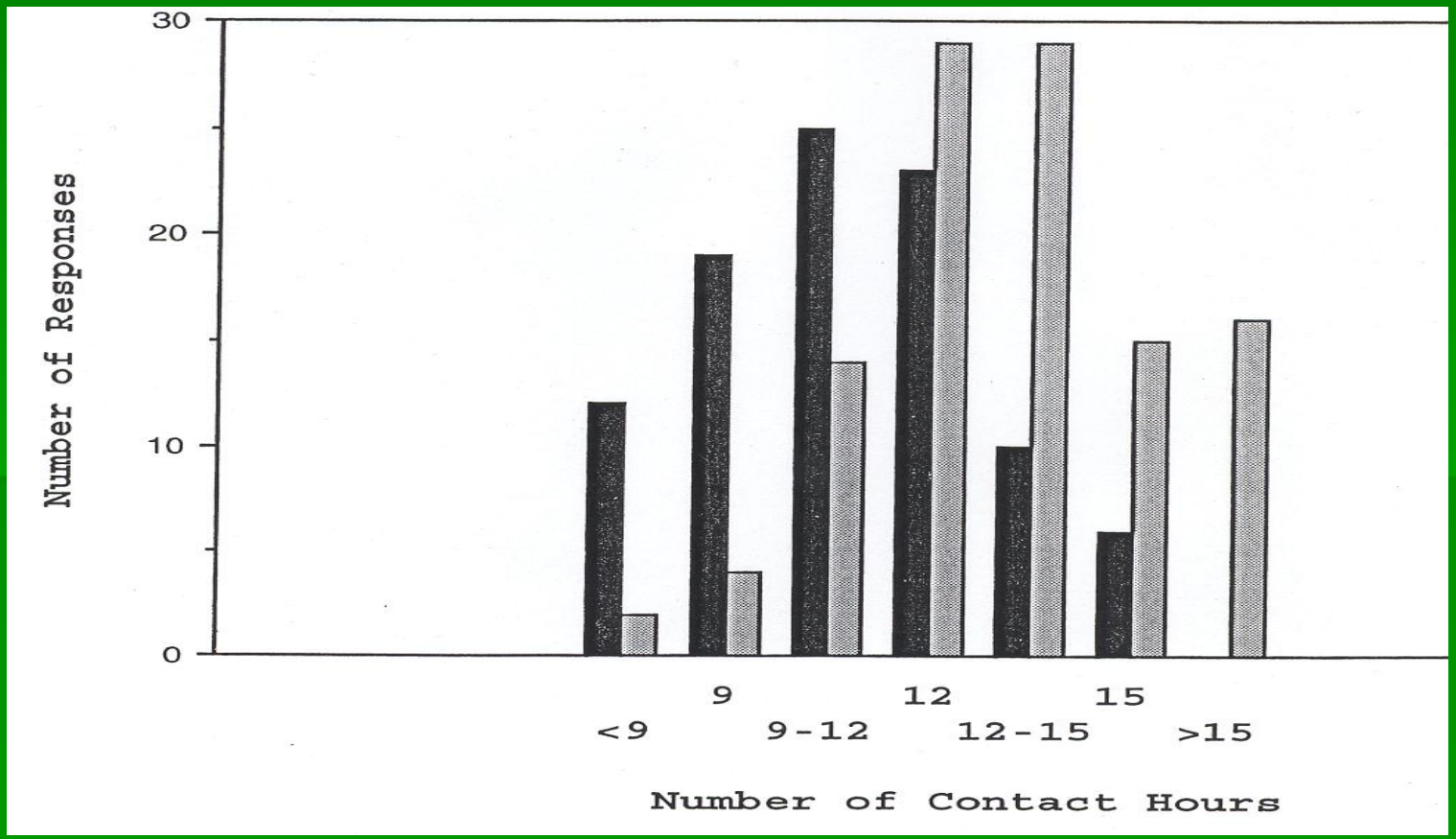
Appropriate Level of Formal Contact Hours?



CUR Quarterly, March 2001, 104-107

Hours Sufficient to Integrate Research into Schedule?

- Black – Yes
- Gray – No



Importance of Support Staff

- Secretarial
- Laboratory prep
- Instrument maintenance
- Facilities manager

- Replace a faculty position with two support/instructional staff?

Making it happen …

- Department strategic plan/coupled with an external review – focus on promoting research
  - Individual commitments
  - Departmental commitments
- Institutional strategic plan
  - Institutional commitments
  - Participate in the CUR Institute “How to Institutionalize Undergraduate Research

CUR Quarterly

- June 2004 issue specifically devoted to strategies for creating time for research
- www.cur.org