

## EDUCATION, INITIATIVES, AND INFORMATION RESOURCES

# Research Scholars Program: A Faculty Development Initiative at the Oregon College of Oriental Medicine

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### ABSTRACT

**Background:** The Research Scholars Program (RSP) was created at the Oregon College of Oriental Medicine (OCOM) to provide faculty development in research literacy, research-informed clinical practice, and research participation skills. The RSP is part of a broad effort, funded by a National Institutes of Health/National Center for Complementary and Alternative Medicine R25 education grant, to infuse an evidence-based perspective into the curriculum at schools of complementary and alternative medicine. The RSP arose from the realization that this curriculum reform would first necessitate faculty training in both research appreciation and pedagogy. OCOM's grant, Acupuncture Practitioner Research Education Enhancement, is a partnership with the Oregon Health & Science University School of Nursing (OHSU SON).

**Design:** The RSP was developed initially as a collaborative effort among the OCOM Dean of Research (R.H.), OCOM Director of Research Education (S.F.), and an OHSU SON education specialist (K.L.). The 9-month, 8 hours per month seminar-style RSP provides the opportunity for a cohort of OCOM faculty and staff to explore research-related concepts and content as well as pedagogical practices that emphasize interactive, learner-centered teaching. The RSP adheres to a competency-based approach as developed by the Education Committee of the grant. As a tangible outcome, each Research Scholar designs a sustainable learning activity that infuses a research perspective into their courses, clinic supervision, or other sphere of influence at the college. In this paper, we describe the creative process and the lessons learned during the planning and initial implementation of the RSP.

**Conclusions:** We view the early successes of the RSP as encouraging signs that research literacy and an evidence-based perspective are becoming increasingly accepted as needed skill sets for present-day practitioners of acupuncture and Oriental medicine.

### BACKGROUND

Research serves several bridge-building roles between the conventional medicine and the complementary and alternative medicine (CAM) communities. It offers a common language and approach for rigorous comparisons of health care options,<sup>1,2</sup> it provides data for developing clinical guidelines,<sup>3–5</sup> and it is often a factor in physicians' decisions to refer patients to CAM practitioners and/or inte-

grate CAM therapies into treatment plans.<sup>6–9</sup> As a means of strengthening the bridge between CAM and conventional medicine, the National Center for Complementary and Alternative Medicine (NCCAM) at the National Institutes of Health (NIH) initiated a program focused on enhancing research education at CAM colleges.<sup>10</sup> The explicit aim of these 4-year R25 grants is to develop CAM practitioners' skills to navigate, evaluate, disseminate, and apply relevant research literature.

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The Oregon College of Oriental Medicine (OCOM), Portland OR, was among the initial group of three CAM colleges funded in summer 2005 through this NCCAM education initiative. In the spirit of promoting CAM/conventional medicine collaborations, as well as to provide practical guidance in research literacy training and pedagogy development, a requisite of these CAM college grants is a partnership with a research-experienced biomedical institution. OCOM's grant, Acupuncture Practitioner Research Education Enhancement (APREE), is a partnership with the Oregon Health & Science University School of Nursing (OHSU SON). The collaboration has provided a creative working interface between two professions (acupuncture and nursing) exploring new perspectives for defining evidence-based health care<sup>11-15</sup> and developing reflective practitioners.<sup>16-19</sup>

Leadership for this grant is provided by working committees with members from both OCOM and OHSU SON. The APREE education committee focused the grant on three specific aims: research literacy, research-enhanced clinical practice, and research participation. The committee proposed to achieve these aims largely through an infusion of research content and research-related learning activities into the existing didactic and clinical curricula. The metaphor of *infusion* was strategically appropriate to the envisioned process as well as culturally appropriate to the herbal therapies taught and practiced at OCOM.

Early realizations in the committee process were that introduction of an evidence-based perspective into the curriculum would require a faculty development program and that such a program should provide pedagogy training as well as enhancement of research literacy skills. The resulting faculty development plan, designed during the initial APREE year, includes several components: discussion of research topics at faculty and clinical supervisor meetings, one-on-one mentoring of faculty members teaching courses targeted for infusion of research learning activities, and a "high-end" seminar series called the Research Scholars Program (RSP).

In the present paper, we describe the syllabus development, format, cohort recruitment, and lessons learned during the planning process and first implementation year of the RSP.

## THE RESEARCH SCHOLARS PROGRAM

### *Defining the program*

The OCOM RSP—based on initiatives created primarily by Rita Benn, Ph.D.—for the University of Michigan's CAM Curriculum R25 grant,<sup>20,21</sup> was designed to engage a small group of OCOM faculty as participant scholars in a 9-month, 8 hours per month seminar series. To accommodate the varied work schedules among the Scholars, the seminar met twice monthly, alternating between 5- and 3-hour

sessions. The RSP was initially developed in active collaboration with the OCOM Dean of Research (R.H.), experienced in both CAM and biomedical research, the OCOM Director of Research Education (S.F.), experienced in design of integrative medicine education, and an OHSU School of Nursing education specialist (K.L.), experienced in nursing and biomedical curriculum development. These key personnel were designated as RSP core faculty. Dr. Benn, who serves as an APREE consultant, also contributed to the RSP design, not the least by coaching us to appreciate the value of fostering a learning community<sup>22</sup> among the Research Scholars, core faculty, and APREE staff.

### *Setting the goals*

The overarching goal for the 18-session RSP was to assist a selected group of faculty members to achieve competencies for infusing a research perspective into their classroom and clinic teaching environments. The formal RSP objectives, which involve expanding research knowledge as well as pedagogical skills (Table 1), were based in part on objectives developed for similar initiatives in integrative medicine education<sup>23</sup> and nursing education.<sup>24</sup>

RSP sessions were designed to provide a balance between research and pedagogy content, and were presented as a mix of lecture, discussion, and learning activities (Table 2). The intent of the educational approach was to shift the Research Scholars from the traditional model of lecturing to approaches involving learner-centered teaching,<sup>25,26</sup> experiential learning, and reflective practice<sup>18,27,28</sup>. The intent of the research content was to familiarize the Scholars with the issues and challenges of CAM and biomedical research, as well as to expand their view that equates research with randomized controlled trials. In our broader view, research is considered within a spectrum of "ways of knowing," which includes medical texts (both Oriental medicine and biomedicine), clinical experience of the practitioner and health care colleagues, patient values, and intuition.

As a tangible and sustainable RSP outcome, Research Scholars were required to create final projects, which comprised learning activities to infuse research literacy into their existing courses and/or other spheres of influence at the college. One of the final RSP sessions was dedicated to formal presentations of Scholars' projects to academic and administrative personnel. Completed projects were placed in an electronic repository to foster their sustainability via use by other faculty members.

### *Designing the learning process*

At the outset, we decided on a set of recurring, essential components of the RSP sessions to guide our planning and complement the core research and pedagogy content. These included a pre-distributed syllabus with learning outcomes; preparatory articles and focus questions; a warm-up activity to bridge learning from the previous session; food (snacks

TABLE 1. OBJECTIVES OF THE RESEARCH SCHOLARS PROGRAM

- Enhance learning, among key faculty and staff, of information access and evaluation, research culture and practice, dissemination and sharing, and innovation and reflection.
- Build a community of scholars to model and teach practices of research literacy, research-informed clinical practice, and research participation skills.
- Promote innovative teaching practices for infusing research content and critical thinking skills into academic and clinical curricula.
- Explore approaches for increasing research literacy and research participation skills being developed by other health care professions and adapt them to the context of acupuncture and Oriental medicine (AOM).
- Create a critical, inquiry-driven and open perspective among OCOM faculty and students regarding research and evidence-based health care for the AOM profession.
- Facilitate professional growth and collaboration in research scholarship.

OCOM, Oregon College of Oriental Medicine.

and lunch) as a key feature of building a learning community; and follow-up, using an online course management platform for Research Scholars to provide session evaluations and responses to preselected reflection questions. Fine tuning of sessions evolved throughout the RSP in response to ongoing evaluation. Guest faculty, invited as content experts, enriched the Scholars' experiences and learning. The final schedule reflected a compromise between envisioned sequential learning and availability of targeted guest presenters.

Most sessions were planned to intersperse pedagogy content with research content to encourage the Scholars to recast their learning and teaching in new forms. Research-focused content was planned to begin with an epistemological approach to identify ways of knowing involved in clinical

decision making, and exercises were developed to aid in creating working definitions of *evidence* and *evidence-based health care* relevant to acupuncture and Oriental medicine. An overview of research design (e.g., an exercise in matching research designs to research questions) was followed by experiential instruction in Web-based access to, and critical evaluation of, research literature. Scholars were also given the opportunity to become active participants in the life-cycle of a research study (i.e., the design, implementation, analysis, and debriefing of the effects of a *qigong* exercise on electrodermal properties at acupuncture points) (Table 2, Session 4). Other research content was designed to include comparisons of Eastern and Western explanatory models of acupuncture, with Scholars encouraged to develop their own "talking points" based on this material.

TABLE 2. RESEARCH SCHOLARS PROGRAM (RSP) SESSION TOPICS

Session <sup>a</sup>	Key topics
1	RSP Overview; Ways of Knowing; Science and the Scientific Method
2	Evidence-Based Healthcare: History, Discourse, and Relevance to AOM; What is Evidence? Evidence Hierarchies
3	Overview of Research Methods; Role of Research Questions
4	Designing a Research Study—Group Exercise
5	Access to and Critical Evaluation of Research; Infusing Research Information into the Classroom, Clinic, and Community Talks
6	Infusing Learning-Centered Teaching into Courses and Supervision; Using Rubrics to Guide Curriculum Development and Grading
7	Qualitative Methods; Biostatistics for Reading Scientific Literature, <i>RSP Projects: Progress Reports</i>
8	Bubbles and Arrows: Skills for Navigating a Research Article
9	Reflective Practice and the Research Culture, <i>RSP Projects: Progress Reports</i>
10	Evidence-Based Healthcare for Acupuncture and Oriental Medicine (AOM), <i>RSP Projects: Progress Reports</i>
11	Research in Energy Medicine and <i>Qi</i> ; Maintaining Dual Paradigms of Health and Health Care
12	How Does Acupuncture Work?: Causes and Correlations
13	Language of Research: Building a Glossary
14	Ethical Issues in AOM Research
15	Disseminating the RSP Experience; Project Presentation Skills
16	Skills for Participation in the Design and Implementation of AOM Research
17	Presentation of RSP Projects
18	Debrief and Evaluation; Synthesis and Celebration

<sup>a</sup>Odd numbered sessions were 5 hours; even numbered sessions were 3 hours.

Of the pedagogical strategies introduced during the RSP, the use of rubrics, providing faculty with an objective means to communicate clear expectations,<sup>29</sup> was foundational. The particular usefulness of rubrics was highlighted for clinical courses where subjective concepts, such as clinical judgment, ethics, and communication often pose evaluation challenges.<sup>29–32</sup> Another key educational strategy was to model active learning, inquiry, and reflection through discussions and small group work in lieu of lecture.

### RECRUITING THE RESEARCH SCHOLARS COHORT

Recruitment of the first cohort of Research Scholars began by creating a shortlist of key faculty members based on their roles as department chairs, and/or instructors of core courses. We also considered the inclusion of staff (e.g., librarian). APREE staff personally encouraged faculty/staff on our targeted shortlist to apply. In addition, a recruitment letter describing the program was sent to all faculty and staff with a follow-up announcement at a faculty meeting. Applicants were asked to submit a letter briefly describing their interest in and personal goals for the RSP.

Narrative statements from the applications of the seven Research Scholars chosen for the first cohort reflected a broad range of interests in the program, including “to influence the type of research that is undertaken and the type of questions that are asked,” “[to learn the] research language in this country,” “[to understand] the relationship between healing and research,” and “[to overcome] one of the major deficiencies in my work as a teacher and a health care provider, . . . little formal education in the field of research.” One letter added that “the Research Scholars Program presents an opportunity for intellectual collegiality [among faculty members] that has been missing at OCOM.” In general, the RSP cohort appeared drawn by a common desire to expand their academic and health care worldviews by incorporating a research perspective into their classroom and clinic activities.

Of the seven (7) Scholars chosen, 5 were from our shortlist; two came forward after the faculty meeting announcement. Table 3 presents the demographic profiles of the Re-

search Scholars, including educational training and primary academic or clinical roles at OCOM. On the basis of these profiles, we anticipated that a major challenge for the RSP would be the different educational backgrounds among the group. This was reinforced by the considerable diversity in Scholars’ training, experience, and attitudes regarding research (e.g., two of the U.S.-trained Scholars had prior research training in the OCOM doctoral program, while the education of both China-trained Scholars included clinical and animal acupuncture research experience). A second major challenge for the RSP derived more generally from the nature of the OCOM faculty, who—typical of most CAM colleges—are clinicians with limited training in pedagogy, and—typical of most institutions of higher education—are teacher-centered in their educational style.<sup>25</sup> On the plus side, the RSP was likely to benefit from the Scholars already knowing one another through a shared experience of teaching at the college.

### LESSONS LEARNED DURING IMPLEMENTATION

Initial rollout of the RSP was aided greatly by carefully planned session syllabi as well as a willingness to make changes based on ongoing formative evaluation. The seminar format proved to be suitably adaptable. We quickly realized, for example, that many of the Scholars had limited familiarity with educational approaches involving small-group discussions and learning activities; several even wondered aloud whether it was possible for their students to integrate content through such interactive strategies (i.e., “learner-centered teaching”). A general lesson for curriculum development was the importance of gaining insight into the Scholars’ perspectives when evaluating the sessions and modifying the syllabi as the RSP unfolded.<sup>18,28</sup> To this end, three approaches proved useful: in-session guided “free-writes,” post-session Web-based reflections and, at the midpoint, an in-session formative evaluation. The combined approaches proved helpful for capturing changing attitudes and ascertaining how we might increasingly foster the Scholars’ learning as the RSP progressed. In this way, for example, we received useful feedback that led to arriving at a rea-

TABLE 3. CHARACTERISTICS AND PRIMARY ACADEMIC/CLINICAL ROLES OF THE INITIAL COHORT OF RESEARCH SCHOLARS

<i>Primary academic/clinical role</i>	<i>Gender</i>	<i>Site of training</i>	<i>Professional licensure and/or degree</i>
Manager, herbal dispensary	f	United States	L.Ac.
Dean of doctoral studies	f	United States	N.D., L.Ac.
Core faculty, TCM and clinic supervisor (Master’s program)	f	China	L.Ac.
Chair, Acupuncture and Oriental medicine (doctoral program)	m	China	Ph.D., L.Ac.
Chair, departments of acupuncture and <i>Qi</i> development (master’s program)	m	United States	D.A.O.M., L.Ac.
Chair, department of biomedicine (Master’s program)	m	United States	N.D., L.Ac.
Clinic Supervisor (Master’s program), current doctoral student	m	United States	L.Ac.

sonable level of preparation and follow-up demands on the Scholars.

A further lesson learned from the Scholars as well as from our direct experience was that despite careful planning, the sessions often contained too much content. This resulted in insufficient time to absorb and engage with the concepts, detracting from the overall learning experience.

As Scholars developed their final projects, we found that multiple strategies were needed to support completion of this activity. Progress reports with peer feedback were interspersed into RSP sessions (see Table 2), and between-session mentoring was offered by APREE staff. In addition, project planning and presentation were facilitated by an instructional design template, which also provided a consistent format for the repository.

A particularly difficult time occurred midprogram when three Scholars announced they needed to leave the program, two of them because of competing administrative responsibilities. Participation in the RSP at the same time that the college was preparing for both national accreditation of its doctoral program and regional accreditation of the institution as a whole proved too demanding on their time. In the spirit of community, they made their respective announcements at an RSP session and left with the support and thanks of the other scholars. Losing three Scholars from the original cohort of seven had the potential to jeopardize the continuation of the program. Nonetheless, the strength of the learning community sustained the program, and two of those who left the cohort are now moving toward implementing their projects.

## EVALUATION

The initial focus of the RSP evaluation plan, mirroring that of the grant as a whole, was on summative outcomes. All of the Scholars, in their roles as OCOM faculty members, had completed a baseline survey of training, skills, and attitudes to research. In addition, the two Scholars from China had participated in a focus group designed to gain additional understanding of our China-trained faculty's experience

and interest in research. This baseline information was reinforced by the RSP application letters (as discussed earlier), a pre-RSP questionnaire, and by stories shared during self-introductions at the initial RSP session. Given the small size of the RSP cohort, the variations in experience and attitudes toward research that emerged among the Scholars were surprising. For example, the Chinese Scholars had an entry-level acceptance of and familiarity with research, consistent with their education within an integrated approach to Traditional Chinese Medicine with Biomedicine, which several of the Western-trained Scholars did not share. This diversity served to enrich the discussions and group learning.

A formative evaluation plan developed more organically from the need to obtain feedback on the RSP as it evolved in practice from its initial outline on paper. As described above, two useful formative evaluation strategies directed at the Scholars were in-session guided free-writes and post-session online responses to session-specific reflective questions. Another effective strategy was postsession debriefing meetings held with RSP faculty and staff to assess how well presenters modeled and engaged the Scholars in learning activities interspersed with research- or pedagogy-based content.

Both formative and summative evaluation for the RSP also derived from the process by which Research Scholars developed their final projects (Table 4) and the readiness of the projects for implementation. Finally, one of the grant partners, who had no role in the RSP, conducted an evaluative focus group comprising the four Scholars who finished the program. Individual interviews were conducted with each of the other three Scholars who completed approximately half of the program. Outcomes were generally positive, as indicated by these representative comments:

In the larger culture that science dominates. . .there is no way that Chinese medicine can go forward without somehow interfacing. . .being conversant with that. Not as a conversion experience necessarily. . .but at least to be familiar with how people think in the research culture.

TABLE 4. RESEARCH SCHOLARS PROJECTS—DEVELOPMENT OF LEARNING ACTIVITIES TO INFUSE RESEARCH INTO COURSES AND CLINIC

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- Infusing evidence and reflection into a 1st-year *qigong* course (m)<sup>a</sup>
  - Evaluating research: How accurate are media reports of biomedical studies? (m)
  - Introducing reflective learning in an acupuncture/Oriental medicine clinic (m)
  - Assessing classical and contemporary evidence in Traditional Chinese Medicine pathology and therapeutics (m)
  - Developing research-based frequently asked questions (FAQ) in the herbal dispensary (m)
  - Strengthening the evidence base in case study writing (d)<sup>a</sup>
  - Enhancing evidence access, critical thinking, and clinical judgment in clinical case presentation (d)
- 

<sup>a</sup>Project designed for master's curriculum (m) or doctoral curriculum (d).

Oh, I told my colleagues, the Chinese faculty, about this wonderful program . . . You can learn a lot about the culture and about language.

The Research Scholars Program changed my teaching of research, how I talk about it with students. It was *greatly* changed . . . I learned as much, if not more, about teaching and teaching tools than about research as a result of this program.

We learned through these interviews as well as via feedback from college administrators that there is strong institutional support for continuation of the RSP.

### CHALLENGES FOR FUTURE PLANNING

Although the planning and implementation of the APREE grant have received considerable support from the college, the logistical challenges of scheduling the RSP sessions and balancing faculty workloads prompted several clarifying discussions between grant staff and OCOM administration. In particular, the lack of a release-time policy for faculty development programs created a hardship, especially for those Scholars with multiple roles within the college. One measure of the RSP success, however, was its contribution to a decision by the college to include faculty development hours within the contract of full-time faculty members.

Additionally, the scope of responsibility for faculty development was often unclear in terms of APREE-related programs versus college initiatives. Meetings with the college-designated faculty development coordinator, himself one of the initial cohort of Research Scholars, have continued to clarify how grant-supported training can pilot pedagogical initiatives that the college can expand as they see fit.

To foster scheduling for the next RSP, we are changing the sessions from 2 partial days to 1 full day per month. Although this change will ease scheduling and may allow Research Scholars to more fully immerse themselves with the material, it will pose new challenges. These include regrouping the topics to maximize the content flow, and improving communication with and between the Scholars in the longer intersession intervals.

The projects the Scholars produced helped us realize the value of mapping the infusion of research literacy content in the college curriculum. Such mapping identifies where various elements of research literacy are being introduced and how to plan for spiral learning<sup>33</sup> that enhances the students' education and achieves the aims of the APREE grant.

### CONCLUSIONS

Under an NIH/NCCAM R25 grant, the Oregon College of Oriental Medicine created a seminar-style Research

Scholars Program to provide research literacy training and pedagogy development. The creation of a mutually enriching learning community among APREE grant personnel and the Research Scholars was a major positive outcome of the program. A second key outcome of the 9-month curriculum was the repository of potentially sustainable projects, comprising research-related learning activities, which the Scholars developed during the RSP.

Although the path of the RSP rollout was neither completely foreseeable nor straight, we highly encourage other CAM colleges to consider implementing such a faculty development strategy, utilizing a partnership model that draws from our experience and those of other similar programs.<sup>20,34-37</sup> We believe the explicit and tacit outcomes from such a project carry considerable potential for lasting positive effects on CAM colleges and their relationships with biomedical partner institutions.

Finally, we view the early successes of the RSP, in combination with similar levels of interest generated by other APREE initiatives, as encouraging signs that research literacy and an evidence-based perspective are becoming increasingly accepted as needed skill sets for present-day providers of health care. Our hope is that the impact of this grant will be reflected as much in changing attitudes and competencies of individual faculty members and students as by changes in the culture of the college whereby research appreciation becomes an integral component of the educational experience.

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