

## **Initiating an Interdisciplinary Doctoral Program: Perspectives from a New Program**

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### **Abstract**

The initiation of a new Ph.D. program in the 21<sup>st</sup> century university requires foresight, strategic planning and, often, a commitment to an interdisciplinary format which capitalizes on shared resources across related disciplines. These concepts, among others, impact form and structure for the doctorate in design. Key Arizona State University (ASU) program development and implementation experiences define the “generic” issues of importance in the development and continued success of any interdisciplinary Ph.D. program in design. The ASU Ph.D. program was initiated in 1996; no Ph.D. program has previously existed in the College. This paper may be of value to multi-disciplined colleges or schools that are exploring a research-based interdisciplinary doctoral program.

### **Arizona State University**

ASU is located in Tempe, Arizona and is home to 49,700 students enrolled on three campuses: ASU-Main, ASU-East, and ASU-West. Other instructional and research sites are located throughout Maricopa County, Arizona. The public research university is state-supported and is one of three in the Arizona system. The mission of the university is to provide outstanding programs in instruction, research and creative activity, and to promote and support economic development, and to provide service appropriate for the nation, state of Arizona, and the state’s major metropolitan area. The university has Research I status, which recognizes premier research institutions in the United States. ([www.asu.edu/asuweb/](http://www.asu.edu/asuweb/)).

The university is part of a university system governed by the Arizona Board of Regents, a body with perpetual succession under the constitution and laws of Arizona. The eight-member board selects and appoints university presidents and

approves new programs of study, among other responsibilities. Final approval of Ph.D. programs rest with this body. ([www.abor.asu.edu/](http://www.abor.asu.edu/)).

### **College of Architecture and Environmental Design (CAED)**

The College has become a premier design and planning educational center for 1581 undergraduate, masters and Ph.D. students. A unique set of disciplines represents the three schools in the College: Architecture, Design, and Planning and Landscape Architecture. Disciplines include: graphic design, industrial design, interior design, architecture, building design, landscape architecture, housing & urban development, and planning. Environmental resource management, housed at ASU-East, also participates in the program.

The college is committed to leadership in developing the highest level of scholarship and understanding of the disciplines it represents, and in critically assessing the relationships among these and the related disciplines. Architecture and Environmental Design is led by Dean John Meunier, a proponent of interdisciplinary work and an advocate of cultural responsibility to communities. ([www.asu.edu/caed/](http://www.asu.edu/caed/)).

### **The Ph.D. Program**

The interdisciplinary Ph.D. in Environmental Design and Planning is a post-masters research-based doctorate. Two core interdisciplinary research methods courses are required during the first year of study.

The Program offers three concentrations in the following areas based on the research and teaching expertise of the faculty:

**Design** (micro-scale issues in the designed environment). Includes the study of architecture, building science, graphic design, industrial design, interior design, and landscape architecture. Research fields include affordable housing, appropriate technology, climate responsive building, computer aided design, energy modeling, human factors in design, facilities planning and management, fire protection, industrialized housing, landscape architecture, lighting, materials and resources, passive solar energy and conservation, and site planning.

**Planning** (macro-scale issues in the planned environment). Includes the study of environmental resource management, landscape architecture, planning, and urban design. Research fields include contemporary urban design, economic development, environmental assessment, environmental planning, ethics in planning, housing and urban development, international development planning, landscape ecology, legal aspects of planning, planning for ethnically diverse populations, the protection of environmentally sensitive areas, public

participation, social dimensions of planning, urban design policy, urban planning, and urban and regional development.

**History, Theory, and Criticism** (cultural and theoretical issues in the history of the environment). Includes the study of architecture, environmental planning, industrial design, interior design, landscape architecture, and urbanism. Research fields include study of contemporary criticism and analysis, design theories and methods, history of architecture, history of building science, history of city planning, history of design, landscape theory and criticism, and planning theory.

Website for the program: [www.asu.edu/caed/phd\\_program/index.html](http://www.asu.edu/caed/phd_program/index.html).

### **Key Questions about Implementing the Interdisciplinary Doctorate**

This paper identifies seven key questions of importance to planning and implementing a doctoral program. Response of each question is based on the ASU experiences gained through implementation of its program, beginning in 1996 and from the planning for the program, launched in 1988.

#### **What was required to initiate the doctoral program at a public U.S. institution?**

Several key elements were required to initiate development of the doctoral program. An essential first step was within-college approval to pursue planning authority, granted by each academic unit of the CAED. Evident at this stage was the lack of substantial numbers of Ph.D. faculty in each unit to support separate, discipline-specific doctoral programs. This weakness became a strength: by combining the doctoral faculty across three academic units, a strong rationale for the within-college interdisciplinary doctorate evolved. The second step was permission to plan the program, granted by the provost of the university. The third was approval of planning authority by the Arizona Board of Regents. This latter approval was permission to plan, not to implement, the program.

Key elements of the next work included agreement among the college faculty to pursue an “all-college interdisciplinary Ph.D.” and appointment of a key group of faculty, lead by a former dean, to draft the Ph.D. proposal. An inventory of available and required resources was prepared. Another key element was definition of financial resources required to implement a program: half-time director, support staff person, graduate research associate funding, and funds for operations. Space requirements and research strengths of existing faculty were also identified.

#### **What was the time frame and steps to development of the ASU program?**

In the early fall of 1995, the College of Architecture and Environmental Design (CAED) requested formal Ph.D. program implementation approval from the Arizona Board of Regents. The process to reach this point of approval actually began in 1988 with the development of the CAED strategic plan, which included clearly articulated goals for the development of the Ph.D. Alignment of program goals with the university's goals was a critical early step needed to gain higher administration approval at the provost level.

In total, nearly five years of work was required to complete program planning authority and to develop the program proposal for review and approval by the Board of Regents. After Board of Regent's approval, aggressive action was taken to assure implementation of the program effective January 1996.

A set of by-laws for operation of the program was prepared, a director's search was conducted, and a Ph.D. Executive Committee was appointed with representatives from each academic program of the College. The founding director was appointed for a four-year term. A rotating term was defined in the by-laws to allow sharing of leadership among the three schools of the college. An administrative assistant was hired, recruitment materials and program web pages were developed, and the program was announced in January 1996.

The first cohort of six students was admitted after an aggressive recruiting period during the winter of 1996. Less than six months had passed since official program approval by the regents. The first class entered in the fall of 1996.

**What were the resources required to initiate the program and what are the types of resources required to sustain the program and recruit students?**

Essential resource components include: personnel budget for a 50% time director, 100% time administrative assistant, and graduate research associate positions funded at quarter-time during the academic year. Associates are funded annually for up to three years. The initial funding allocation provided six quarter-time associates; recent funding increases raised the total number of quarter-time associates to fourteen. A modest operations budget of less than \$1000.00 a month also exists. Funding for travel for student recruitment or for potential student visits to campus is not available. A portion of one research associate position is used to fund student travel to deliver papers at conferences and other academic events. Supplemental funding is also available from the Herberger Center, the college's research arm, and from the ASU Graduate College.

Space provided for the program includes an administrative office for the director and administrative associate and a "homebase" for doctoral students to share. Student computing resources are provided within the homebase and at other computing locations within the CAED.

## **What are the ASU experiences with students pursuing interdisciplinary topics?**

Through consensus, a key approach in the two required research methods classes required of each new cohort is the development of an interdisciplinary foundation for the conceptual framework for their work. Students are encouraged to seek out research problems that exist in the gray areas between and among disciplines. For many students this is a natural process; for others a difficult transition in philosophy and thinking.

A key advantage for the ASU program is its presence in a large, urban area combined with a collegial structure supportive of multidisciplinary and interdisciplinary thought. Students are required to compose their dissertation committees from faculty across disciplines within and outside of the College. As examples, the following titles for completed and in-process dissertations reinforce the concept:

- Cromarity, Ross. The development history of the Suffolk County farmland preservation program. December 1999.
- Rushman, Michael. Planning and property: two regimes for ordering the natural world. May 2000.
- Dalvesco, Rebecca. Psychological and semiotic theories as they may apply to modernist architecture and industrial design. Dissertation in progress, spring 2000.
- Tuzmen, Ayca. A distributed process management environment for collaborative building design. Dissertation in progress, spring 2000.
- Yang, Yilun. Developing and testing strategies and methods for sustainable industrial design. Proposal under development, spring 2000.

## **What is the organizational structure for the post-masters interdisciplinary Ph.D. and why was the structure selected?**

The Environmental Planning and Design program is structured as a post-masters Ph.D. Students complete a minimum of 54 semester credits – 30 credits of coursework and 24 credits of research and dissertation. Students normally take nine credits per semester and generally complete their coursework in three to four academic semesters plus one summer session. A written comprehensive exam, an oral defense of the exam, and acceptance of a dissertation proposal are required for admission to candidacy. Students may complete six credits of research leading to the dissertation proposal prior to candidacy. The remaining eighteen credits of research and dissertation must be completed after admission to candidacy. It is expected that students will take one to three years to complete their dissertations. The dissertation must be completed within five calendar years of admission to candidacy. A public presentation and successful defense of the dissertation is required for awarding the Ph.D. degree with a major in environmental planning and design.

All coursework, proposals and examinations are approved and monitored by a dissertation committee composed of a minimum of three members including the chair. All members must be graduate college-approved core faculty. The program has its own core faculty criteria. New eligible faculty are reviewed annually; existing core faculty are re-reviewed on a three year cycle.

### **What actions required to successfully administer a newly-implemented Ph.D.?**

Successful administration of a new program requires a series of well thought out strategies in key areas. This list defines, but does not describe due to space limitations, some of the key areas:

- Effective recruitment strategies and materials. Materials available in hard copy and on the web.
- By-laws and operating principles that support students and faculty and at the same time adhere to university rules and regulations.
- Well-defined planning calendar for all events, deadlines, and milestones for each academic year.
- A research arm of the college; for ASU it is the Herberger Center ([www.asu.edu/caed/herberger/index.html](http://www.asu.edu/caed/herberger/index.html)).
- Excellent rapport with other administrators within the college and across the university.
- Working linkages with the graduate college, its leadership and staff.
- Administrative staff member(s) that care about students and support their daily programmatic needs.
- An interdisciplinary philosophy reinforced through key core research methods courses.
- A place and forum for doctoral cohorts to share their ideas with each other and with faculty and other students.
- Criteria for selection of core faculty.
- A critical mass core group of faculty committed to doctoral education and research.
- Credentials of faculty to support recruitment and nurturing of students.
- Agreement by faculty to mentor individual students; a prerequisite for any student's admission to the program.
- Community relationships supportive of interdisciplinary research projects.
- Clear guidelines for students regarding evolution of their programs of study and candidacy.
- Ways to integrate new students into the fabric of the college.
- A diversity of students across the concentrations of the program.

### **How is international recruiting conducted?**

Recruitment occurs through several distinct strategies: continuously updated web pages including an on-line application process, one-on-one faculty recruitment, and program fact sheet and newsletter mailings to academic programs representing all disciplines of the college. Faculty members distribute program materials at conferences and other events.

Much international recruitment is focused through faculty relationships with colleges throughout the world. Specific country examples include, China, Turkey, and Mexico. New relationships are continuously explored. In 2001-2002, much emphasis will be placed on one-on-one recruitment since applicant pools are approaching 50 with admissions limited to six to eight students in each cohort. Doctoral students and alumni are also valuable volunteers in the recruitment of their peers from their home institutions and agencies.

## **Conclusions**

Evolution of the interdisciplinary doctorate in a new millennium hinges on clear programmatic goals, successful strategies and planning, support among faculty and administration, and availability of adequate resources. These points are of significance in multi-disciplined colleges that wish to define the role of the doctorate in their research, teaching, outreach and service agendas. The roles of doctoral education in the 21<sup>st</sup> century might include:

- Promotion of the intellectual development of design disciplines.
- Creation of a new set of scholars and researchers that can contribute to the development of the disciplines and to the connections between related disciplines through interdisciplinary thought.
- Preparation of educators, professionals, and consultants that are able to significantly impact the new economy.

The success of programs that address the roles of doctoral education depends on a clear initial vision, an implementation plan, and strategies to measure outcomes including the tangible benefits a doctoral program brings to multi-discipline colleges as they re-assess their roles in the 21<sup>st</sup> century.

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## **Author Biographical Notes**

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He received an interdisciplinary Ph.D. from the University of Tennessee; the M.Arch. in desert architecture from the University of Arizona; the M.S. from the University of Tennessee; and the B.S. from the University of Alabama. He has taught at the University of North Carolina, Colorado State University, the University of Tennessee, and Arizona State University.

Kroelinger has lectured and published on various aspects of the built environment and has conducted research projects evaluating how buildings perform and how they should be designed.

**Jacques R. Giard, Ph.D.** is Professor of Industrial Design and Director School of Design, College of Architecture and Environmental Design, Arizona State University. He received a diploma in furniture design in 1969 from l'Institut des arts appliqués in Montréal. Professor Giard completed a two-year graduate program in industrial design (engineering) at the Birmingham Polytechnic in England in 1971.

Professor Giard is published in journals such as Design Issues and the Design Management Journal, and has had papers accepted at international conferences. He is the author of two teaching manuals published by Carleton Press. He has lectured for design schools in France, Hong Kong, Japan, India, Turkey and Chile.

In December 1996, Professor Giard was elected President of the Association of Canadian Industrial Designers. He was a member of the organizing committee for The Humane Village, the 1997 congress of the International Council of Societies of Industrial Design held in Toronto.