



THE NEWSLETTER

INTEGRATIVE PATHWAYS

OF THE ASSOCIATION FOR INTEGRATIVE STUDIES

Vol. 34, No. 4 (December 2012)

ISSN 1081 647X

William H. Newell, Editor

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Find *Integrative Pathways* at www.muohio.edu/ais/

Members may e-mail coxpa@miamioh.edu for password information.

Association for Interdisciplinary Studies is official name starting January 1, 2013

As of January 1, 2013, your professional association will become the Association for Interdisciplinary Studies.

The name change was discussed informally at the synthesis session of the 2011 conference and, after an exhaustive study by the Board of Directors, formally discussed at the 2012 conference, followed by a vote of members who paid dues for 2012 or 2013. Over 55% of eligible voters cast ballots, 90% of whom supported the new name. AIS filed final paperwork with the Ohio Secretary of State in late November. We anticipate the new name will be official January 1, 2013.

The name of our journal will also change to *Issues in Interdisciplinary Studies*, but *Integrative Pathways* will remain the name of our newsletter, signifying our continuing commitment to broader integrative approaches, and, of course, we'll still be known as AIS.

Our new name reflects the rapidly expanding scope of our mission, set out in a new mission, vision, and core values statement on our website under About AIS. It is obvious from the annual conference attendance and membership of our Board of Directors (a president and an At Large member from Canada, and an organizational development director from the Netherlands) that AIS is evolving into a U.S.-based international association. In fact, a major impetus for the name change is that "integrative" tends to be associated outside the U.S. with medicine, not education. It is also evident from presentations at recent conferences that, while we retain our core of expertise in undergraduate education, more of our membership is interested in research—by teams as well as individuals—and graduate education as well.

As we enter this new era in the 35-year

Dear AIS Members,

It is my pleasure to inform you of the results of our ballot regarding the organizational name change.

55.3 % of eligible voters cast a ballot. Of those, 90.1% voted to change our name to The Association for Interdisciplinary Studies.

This ballot is the final internal step required by our constitution. We will now fill out the paperwork in the state of Ohio where AIS is registered. We anticipate that the official date for the name change will be January 1, 2013.

We will over the next months make sure that we communicate this name change to all relevant people and organizations. Please feel free to let your contacts know of this impending change. We will be changing the name of our journal, but not our newsletter.

I would like to thank Jennifer Dellner and Phyllis Cox for managing the ballot and facilitating a high turnout.

Sincerely,
Rick Szostak
AIS President

Letter to membership, November 5, 2012.

history of our association, we encourage our members to notify their institutions, colleagues, and students of the name change. More information about AIS can be found on the AIS Website, www.muohio.edu/ais. Members should check the AIS Website in early January for updates in connection with the new name. ■

www.muohio.edu/ais

AIS Launches New Honor Society: Alpha Iota Sigma

By Michelle Buchberger
Franklin University
and Julie Borkin
Oakland University
Co-coordinators, Alpha Iota Sigma

If you were able to attend the annual Association for Integrative Studies conference this October in Michigan, you witnessed the first student members being inducted into Alpha Iota Sigma, the international honor society for interdisciplinary studies!

Thanks to the hard work of the founding institutions: Michigan State University, Oakland University, University of South Florida Sarasota-Manatee, Holy Cross, SUNY Potsdam, Baylor University, University of Texas Arlington, and Franklin University, 11 students were recognized for academic excellence in scholarship and achievements in interdisciplinary students at the undergraduate level, some of whom were able to attend the conference to be recognized and receive their certificates.

Interest in an honor society first emerged in an AIS LISTSERV discussion in 2010, which resulted in a panel discussion at the 2010 AIS Conference in San Diego, facilitated by Pauline Gagnon with speakers, Richard Matlak (Holy Cross faculty/director of IDS), Colleen Curran (Holy Cross IDS student), and Peter Wakefield (Emory University faculty). The level of interest and engagement demonstrated during this discussion led to an endorsement by the AIS Board of Directors, and Pauline Gagnon and Michelle Buchberger were charged with founding the honors society in 2011. A planning meeting at the Grand Rapids conference discussed the process of a pilot group, and their work culminated at the 2012 AIS conference meeting in Oakland.

The mission of Alpha Iota Sigma is to promote the benefits of inter-



From left to right: (back row) Pauline Gagnon and Michelle Buchberger (co-coordinators of Alpha Iota Sigma); Rick Szostak (AIS President); Julie Borkin (Oakland University); Melissa Sloan (University of South Florida Sarasota-Manatee); Christina DeJong (Michigan State University); (front row) Caroline Voldstad, student (Holy Cross); Richard Matlak (Holy Cross) Jack Poma, student (Oakland University); Maggie Phelps, student (Oakland University); Bobbie Molter, student (Michigan State University); Taylor Firman, student (Michigan State University). Honor students not pictured are: Amy Frania, Anthony Gentry, Deanna Synowiec, Donald Pascoe, Holly D. Smith, and Megan Welsh, all from Oakland University. (Photo by Sarah Eikelberg, Oakland University)

disciplinary work; provide a forum to encourage interdisciplinary collaboration among students, faculty, and local community members; investigate and encourage methods of interdisciplinary learning; enhance understanding and application of interdisciplinary knowledge among the general public; and create a sense of community among interdisciplinary students and graduates of interdisciplinary programs.

By the end of January 2013, you will be able to visit the honor society page on the AIS Website. This page will provide information about Alpha Iota Sigma chapter and student eligibility, how to found a chapter at your institution, annual dues, and honor society activities. The honor society hopes to sponsor a student panel each year at the AIS conference as a forum to promote and showcase student scholarship.

Pauline Gagnon has reluctantly stepped down as honor society co-coordinator due to her involvement with (numerous) other AIS activities. Stepping ably into her shoes is Julie Borkin of Oakland University, whose founding Alpha Iota Sigma chapter recognized five students at the Michigan ceremony. Until the Alpha Iota Sigma Web page is live, Michelle and Julie welcome any questions about the honor society from prospective chapter members.

We are excited about this exciting new forum for student work and the opportunities for community and identity that Alpha Iota Sigma affords its members. Congratulations again to our inaugural honor students!

E-mail: Julie Borkin (borkin@oakland.edu) and Michelle Buchberger (michelle.buchberger@franklin.edu)

A Royal Success! The 34th Annual AIS Conference

By Scott L. Crabill
Interim Vice Provost
for Undergraduate Education, Oakland
University
2012 Conference Chair

The 34th Annual AIS conference was held in Rochester, Michigan, sponsored by the Bachelor of Integrative Studies Program and the Office of Undergraduate Education at Oakland University. The conference was held in a picturesque setting at the Royal Park Hotel, situated amongst scenic trails, waterways, and a quaint downtown area. The theme for this year's conference was "Public Policy and the Promise of Interdisciplinary Dialogue," which featured keynote speakers and conference sessions that addressed the role of IDS within the future of higher education.

The keynote speakers did a fantastic job in addressing this year's theme and providing participants with much to think about in regard to the dialogue of IDS in the public sphere. Dan Butin (Dean of Education at Merrimack College) kicked the conference off with an energetic after-dinner speech that engaged and enticed participants to think deeply and critically about the relevance of IDS on the college campus, in particular the connections of IDS within the "Engaged Campus." Our speaker on Friday, Jeff Williams (Public Sector Consultants), brought the discussions into the realm of the workforce and political landscape. Employers and policymakers are noticing the relevance of IDS. The final speaker of the conference, Torin Monahan (Vanderbilt University) rounded out our speaker series by addressing the role of IDS within the work of surveillance, privacy, and security (SurPriSe).

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Above, Scott L. Crabill greets attendees at the registration table for the 2012 AIS Conference; at left, AIS mugs were for sale for the first time; below, attendees participate in one of sessions. (Photos by Roslyn Abt Schindler, AIS Board of Directors)



2012 AIS Conference

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His was an engaging and sobering glimpse into the freedoms and privacy at risk with emerging technologies. Many were relieved to know that there is someone doing the important research of taking pictures of those taking pictures of us.

Based on a suggestion made during the 2010 conference, a plenary session focusing on “The State of the Field” was launched during the 2011 conference and followed up with a second session at this year’s conference. The 2012 “State of the Field” session continued its place as the kickoff of the conference, featuring Rick Szostak, Machiel Keestra, and Gretchen Schultz discussing new developments in IDS nationally, abroad, and within the scholarship of interdisciplinary teaching and learning. One of the distinctive features of this year’s conference was a meeting to discuss a motion to amend the association’s name to the “Association for Interdisciplinary Studies.” Following the discussion, which heavily favored the proposed name change, an electronic ballot went out the membership on October 24. The results of the vote are reported separately in this newsletter.

Approximately 120 people from the U.S., Canada, China, and Europe attended this year’s conference. A highlight for many of us at the conference was the inauguration of the new international undergraduate Interdisciplinary Studies Honors Society, Alpha Iota Sigma, which inducted 14 inaugural students from eight chapters at institutions across the United States. Special thanks to Pauline Gagnon and Michelle Buchburger and their committee, for the tireless work that went into creating the by-laws and identifying the founding members and institutions.



Nick Sousanis hands out samples from his dissertation during his presentation. A doctoral candidate at Teachers College, Columbia University, he spoke on the ways in which the spatial interplay and integration of image and text that define comics can serve as a powerful tool for thought and serious inquiry.

(Photo by Tanya Augsburg, AIS Board of Directors)



The tradition continues! Former AIS President Don Stowe and son, first time AIS presenter Drew Stowe, a doctoral student from Clemson University. (Photo by Tanya Augsburg, AIS Board of Directors)

Founding institutions and Honor Society advisers include the following:

- Baylor University – Anne Marie Schultz
- Franklin University – Michelle Buchberger
- College of the Holy Cross – Richard Matlak
- Oakland University – Julie Borkin
- Michigan State University – Christina DeJong
- SUNY Postdam – Gerald Ratliff
- University of Southern Florida – Melissa Sloan
- University of Texas at Arlington – James Welch

The honor society should bring a new and exciting dimension to future conferences by including undergraduate voices in presentations of interdisciplinary research.

We were fortunate that the rain and cold held off until Saturday, allowing participants to enjoy chilly mornings and warm sunny afternoons for most of the conference. The gorgeous weather allowed many to venture out to the outdoor trails for a walk along the water and venture into town for shopping and some exquisite dining.

Special thanks to Julie Borkin for her work on the conference. On behalf of the nine-person planning team here at Oakland University, I want to express what an honor it was to host this event. We truly feel that all the planning in the world does not make a great conference; it is the people who attend and participate. We look forward to seeing you in Ohio next year at the conference hosted by Miami University (Ohio). ■

CONFERENCES

JIS Symposium to Examine Future after 25 Years of Study

The Journal of Interdisciplinary Studies will celebrate its 25th anniversary of modeling interdisciplinary integration of the liberal arts with a symposium to explore the relevance of interdisciplinary studies for the next 25 years.

The symposium is scheduled for August 1-4, 2013, at the Hilton in Pasadena, California. The deadline for proposals is April 15, 2013.

In the last two decades, interdisciplinary studies have blossomed into a challenging venue for innovation in teaching and research. Remarkably, the natural sciences have turned to interdisciplinary engagement by the inner logic of discovery more than deliberate design. The National Academy of Sciences' *Facilitating Interdisciplinary Research* confirmed the need for interdisciplinary approaches as the most relevant methodology for addressing major dilemmas confronting humanity in the 21st century. The National Science Foundation and the Association of American Universities also encourage interdisciplinary research. But the greatest need for interdisciplinary integration is in the social sciences and humanities, which explore complex human interactions and designs for living, including socio-psychological, economic, political, cultural, and spiritual dimensions

in an increasingly interconnected world. The burgeoning science-ethics-religion dialogue reflects a growing realization of the interdependence of all phenomena. The outstanding question, then, is: What are the most promising interdisciplinary methodologies to reinvigorate teaching and research that can inspire the quest for new knowledge, problem-solving, and syntheses across all the arts and sciences, which would enhance our understanding of the human condition in the global village? The urgency of this task is heightened by rapid scientific and technological advances, which seem at times to outpace the human capacities to manage them for the common good.

Interdisciplinary Studies 2013 endeavors to bring together scholars from a wide range of disciplines and denominations for an exciting international conference which takes both scholarship and faith seriously. The symposium is co-sponsored by IIR-ICSA-JIS in the City of the Roses—the world-famous Tournament of Roses—in sunny Southern California, with many cultural/sightseeing opportunities. Abstracts (250 words) should be sent by April 15, 2013, to: Dr. O. Gruenwald, JIS Editor, 1065 Pine Bluff Dr., Pasadena, CA 91107, USA.

More information can be found on the conference website: www.JIS3.org/symposium2013.htm ■

IMPACT Online Journal Publishes Essays on IDS

IMPACT, the peer-reviewed, bi-annual online journal of the Center for Interdisciplinary Teaching & Learning (CITL), is seeking scholarly and creative non-fiction essays about the theory, practice and

assessment of interdisciplinary education. Essays should be between 500 and 5,000 words.

More information about submitting essays can be found on its website: <http://www.bu.edu/cgs/citl/impact/> ■

Boulding Award Honors Yves Lenoir for Achievements

Yves Lenoir, Professor of the Faculty of Education of the University of Sherbrooke, Quebec, Canada, was honored with The Boulding Award during the 2012 AIS Conference in Rochester, Michigan.



Yves Lenoir

AIS President Rick Szostak made the presentation during the conference.

AIS bestows the award on individuals whose writings or professional performance have made major, long-term contributions to the conception or enactment of interdisciplinarity.

Lenoir is the seventh recipient of the award, which was established in 1990. Because the Boulding Award celebrates outstanding records of accomplishment, it is presented only occasionally.

Lenoir has contributed to clarifying the plurality of meanings of interdisciplinarity and integration as well as their impacts on teaching practices. In 1991, he established a research group, the Centre de Recherche sur L'intervention Educative (CRIE), which he directed until 2006. Characterized by its interdisciplinary perspective, the CRIE has brought together professors from different departments in education with other outstanding faculty in humanities, sciences, and engineering in order to analyze educational questions from a multidisciplinary perspective based on a variety of interdisciplinary approaches.

His published works constitute an essential reference on an international scale: in European, Latin American, and North American higher education. His numerous



International scholar Yves Lenoir is the seventh recipient of the Boulding Award, which recognizes outstanding records of accomplishment in interdisciplinary studies. He was presented the plaque during the AIS Conference in October. (Photo by Tanya Augsburg, AIS Board of Directors)

publications are characterized by an unusual synthesis of breadth, depth, and originality. The rare ability to turn thought into action is also evinced in the daily professional lives of educators in school settings around the world. He has lectured and trained in such countries as Germany, Belgium, Brazil, Chile, Colombia, Spain, France, Morocco, Lebanon, Tunisia, and the United States, and his work and its widespread influence have brought him both national and international renown. In 2007, he was decorated on behalf of the King of Belgium by the Belgium Ambassador to Canada, with the Order of the Crown, the highest distinction awarded to a civilian and the first order of knighthood in Belgium.

He is the holder of the prestigious Canada Research Chair in Educative Intervention for a second mandate (2008-2015) and a member of the evaluation council for the Canada Research Chair Program (CRCP). He was also a member of the Canadian Commission for UNESCO and of the Quebec commission on teaching and university research (CERU) of the Superior Council on Education. He is also an active international expert for various international organizations, and he has served as president of the World Association for Educational Research from 2000 to 2012.

His publication record includes editorial leadership for the special 28th edition of *Issues in Integrative*

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Below, Pauline Gagnon celebrates her recognition as the fourth recipient of the award, with Roz Schindler, right, AIS Conference Liaison on the AIS Board of Directors. (Photo by Tanya Augsburg (AIS Board of Directors))



Pauline Gagnon receives the Newell Award from AIS President Rick Szostak in ceremonies in October at the AIS conference. (Photo by Roslyn Abt Schindler, AIS Board of Directors)

Pauline Gagnon Receives Newell Award for Service to AIS

AIS recognized Pauline Gagnon, past president of AIS, for her contributions to the Association by bestowing on her the Newell Award for Exemplary Service.

AIS President Rick Szostak presented her with the award in ceremonies during the 2012 AIS Conference in Rochester, Michigan. She is the fourth recipient of the award, which was established in 2009.

Pauline, Chair of the Mass Communications and Theatre Department and Professor of Theatre at the University of West Georgia, has been a member of AIS since 1996. She first became involved in AIS when she participated in the Institute in Integrative Studies as the head of a three-person team from the University of West Georgia, where she was Director of Interdisciplinary Studies and Writing Across the Curriculum at the time.

She gave her first AIS conference presentation on "Using

AIS Standards in Assessing Interdisciplinary General Education Courses" in 2001 (in the immediate aftermath of the 9/11 attacks on the World Trade Towers}. The following year she was elected to the AIS Board of Directors, where she has served for the last decade. Her rise to leadership within the Board was rapid: two years later she became Director of Development, and two years after that she was president-elect.

Her contributions to AIS have focused on the annual conference, consulting, the website, the initial internationalization of AIS, and most recently establishing Alpha Iota Sigma, the international honor society for interdisciplinary studies.

She has long been highly visible at AIS annual conferences. In 2003 she served as the first coordinator of the "Getting to Know AIS" sessions, and has contributed to most of them ever since. Similarly, she volunteered for the Guide session on curriculum. And for six

of the last seven years she has teamed with Allen Repko on what has become known as the "Nuts & Bolts" workshop, which has introduced so many AIS members to self-consciously interdisciplinary teaching.

The Nuts & Bolts workshops are a direct outgrowth of her consulting on interdisciplinary curriculum development, which dates back to 1996 when she finished her six-month participation in the Institute in Integrative Studies. In 2002 she became the first AIS consultant trained by Beth Casey and Bill Newell. The practicum portion of that training was a joint two-day consultancy with Bill at the University of South Dakota, the second day of which she took over the lead role. USD was so impressed with her that they wrote a letter to *The Chronicle of Higher Education* praising the consulting services of

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35th Annual AIS Conference

November 7-10, 2013

Hosted by Miami University of Ohio



Dear Colleagues,

It is our pleasure to invite your participation in the 35th annual Association for Integrative Studies Conference in November 2013. The conference will be hosted by Miami's Western Program, in partnership with our Bachelor of Integrative Studies Program, Honors Program, and other interdisciplinary programs at Miami. The meeting dates are Thursday, November 7, through Sunday, November 10. Presentations and workshops will be held in Miami's Marcum Conference Center, and in historic Peabody Hall (see photograph below), the hub of today's Western Program and former home of the innovative Western College Program/School of Interdisciplinary Studies (1974-2008). The City of Oxford, in southwestern Ohio, and the wider region have a lot to offer in terms of history, hospitality, and outstanding natural beauty. We are planning a first-rate experience for conference attendees.



INTEGRATING ARTS AND SCIENCES

We are working at a time when higher education is placing ever greater premium upon integrative and interdisciplinary approaches to learning and problem solving. This shift in the academy is driven by multiple factors, including the professional demands of the 21st century marketplace. Major employers are looking for graduates with strengths in critical and creative thinking, broad cultural and scientific literacy, and a commitment to teamwork. These skills have proven difficult to obtain sometimes through traditional disciplines. Interdisciplinary studies hold great promise for enhancing the modern curriculum, but require imaginative strategies to enhance communication and collaboration among educators in the natural sciences, social sciences, and the arts. To promote these goals, the 2013 conference will serve as a forum for a wide-ranging dialogue among scholars interested in the development of new approaches to teaching and research that will meet the complex needs of students, employers, and other stakeholders in our rapidly evolving society.

In early December of this year, you can check our website—<http://www.muohio.edu/2013AIS>—for updates about the meeting.

We look forward to greeting you in November 2013 and engaging in vibrant discussion and a rewarding exchange of information and ideas.

Nicholas P. Money, Ph.D.
Western Program Director & Professor of Botany

Kim Ernsting
Assistant Director, Western Program

35th Annual AIS Conference

November 7-10, 2013

Hosted by Miami University of Ohio

**CALL FOR PROPOSALS****INTEGRATING ARTS AND SCIENCES**

We are working at a time when higher education is placing ever greater premium upon integrative and interdisciplinary approaches to learning and problem solving. This shift in the academy is driven by multiple factors, including the professional demands of the 21st century marketplace. Major employers are looking for graduates with strengths in critical and creative thinking, broad cultural and scientific literacy, and a commitment to teamwork. These skills have proven difficult to obtain sometimes through traditional disciplines. Interdisciplinary studies hold great promise for enhancing the modern curriculum, but require imaginative strategies to enhance communication and collaboration among educators in the natural sciences, social sciences, and the arts. To promote these goals, the 2013 conference will serve as a forum for a wide-ranging dialogue among scholars interested in the development of new approaches to teaching and research that will meet the complex needs of students, employers, and other stakeholders in our rapidly evolving society.

To facilitate this dialogue, we welcome proposals for presentations in multiple formats, including, but not limited to, single papers and performances, integrated panels, and roundtable discussions that address the following issues:

- The art of science (artistic representations of the natural & social sciences)
- The science of art (scientific exploration of the arts & humanities)
- Ethics across the arts, the social sciences, & the natural sciences
- Representing the environment from the viewpoints of the arts, social sciences, & natural sciences
- Why science & mathematics matter to non-scientists
- Why the arts & humanities matter to scientists
- Challenges of the interdisciplinary curriculum (literacy in the sciences & the arts)

The program committee is particularly interested in presentations that consider interdisciplinary and integrative learning. More specialized presentations dealing with the perspectives offered by individual disciplines are also encouraged if they are designed to stimulate discussions on the wider conference theme of the integration of the Arts and the Sciences. General presentations that advance the mission of the Association for Integrative Studies are also welcome.

Submission forms should be sent to AISconference@muohio.edu by March 30, 2013, and we expect to respond to proposal writers by May 31, 2013.

Newell Award

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AIS and Pauline in particular. Since then she has consulted at seven other institutions, most recently last year.

For members who may never have attended an AIS conference, she may be best known for her long-standing contributions as editor and lead reviewer of the peer-reviewed syllabi section of the AIS website. She took over that position from Marcia Seabury, who initially proposed the idea and oversaw its establishment. And Pauline has since assembled and coordinated able teams of reviewers, providing important opportunities for members not on the Board of Directors to make significant contributions to

AIS. Over the years she has added new categories to that section of the website, enriching it as a resource for all interdisciplinary teachers.

As president she continued projects initiated by Carolyn Haynes on the future management of AIS and by Don Stowe on a redesign of the website. In retrospect, though, the chief contribution of her presidency may be the initial steps taken to internationalize AIS, which notably included the appointment of Lorraine Marshall and Machiel Keestra as international liaisons to the AIS Board of Directors.

Most recently Pauline has championed the establishment of an honor society. With Michelle Buchberger as co-coordinator, she led the formation of a group of pilot chapters and then the development

of a mission statement and by-laws. The inaugural meeting of the National Council at the 2012 conference marked the founding of the International Honor Society for Interdisciplinary Studies.

In 2013, Pauline will continue her record of service to AIS as co-editor, with Gretchen Schulz, of the first edition of the association's peer-reviewed academic journal under its new name, *Issues in Interdisciplinary Studies*. ■

Lenoir Receives Award

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Studies (2010), co-edited with Julie Thompson Klein. This groundbreaking issue presented a comparative view of national perspectives on interdisciplinarity in schools. ■

Members May Nominate Candidates for AIS Awards

Members may nominate candidates for AIS recognition based on the criteria for each of the two awards.

The Kenneth E. Boulding Award is presented to scholars whose writings or professional performance has made major, long-term contributions to the concept or the enactment of interdisciplinarity. The scholarly or professional work of winners of the Boulding Award for sustained excellence in interdisciplinary work will manifest such qualities as:

- Create demonstrably important, but unexpected or new connections between disciplines or professions.
- Create major institutional or social change or awareness based on the conscious promotion and a deep understanding of interdisciplinarity.
- Create widespread and demonstrably crucial new understandings or redefinitions of interdisciplinarity.

Members can nominate a candidate

for the Boulding Award by submitting a Word document describing the nominee's work in accordance with the criteria for the award, along with a curriculum vitae of the candidate, in an e-mail with Boulding Nomination in the subject line to aisorg@muohio.edu.

The Newell Award is given to a member whose service to AIS has made long-term contributions to its mission and vision. That service can take a variety of forms:

- Leadership and active membership on the Board of Directors, task forces, committees, and other AIS bodies.
- Service as host, member of program or other committees, or coordinator for AIS conferences, and active conference participation (e.g., presenting papers, moderating sessions, or conducting workshops).
- Representation of AIS at other professional conferences, in other professional associations, or on inter-

organization task forces.

- Leadership in extending AIS into other countries, other levels of education (e.g., K-12 education, graduate education), or outside the liberal arts (e.g., professional education, research, or practice; governmental policy making and administration).
- Development of new resources for members (e.g., a directory of interdisciplinary master's degree program, a bibliography of publications on interdisciplinary studies, an AIS certificate for excellence in interdisciplinary general education programs).
- Consulting.

Members can nominate a candidate for the Newell Award by submitting a Word document describing the nominee's service in accordance with the criteria, along with a curriculum vitae of the candidate, in an e-mail with Newell Nomination in the subject line to aisorg@muohio.edu ■

Trading Zones: Collaboration within an STS framework

By Danny Adams
Associate Dean
College of Liberal Arts
Norfolk State University

This volume of essays evolved from a workshop in 2006 supported by the National Science Foundation (SES-0526096), the Boston Consulting Group, and the Consortium for Science Policy and Outcomes. The four days of discussions and presentations addressed collaboration across disciplines with a framework espoused by science, technology, and society (STS).

The focus of the essays poignantly addresses the increasing need in interdisciplinary research to understand how to collaborate across disciplines when a problem or research question cannot be solved/ answered by the means of one discipline. It has been noted that advancements should be made to examine the collaborative side of the interdisciplinary process, and that not only is it important to have a model of the interdisciplinary research process, but “it may be equally important to have one [model] for the process of interdisciplinary collaboration.”¹

The overarching concern of the book is with delineating pathways whereby apparently incommensurable research communities can work together to solve problems. The essays draw on the concepts presented in the trading zone framework to address this issue. Overall, the applicability of the concepts was roundly successful. But what was even more exciting was to glimpse the creation of ‘new’ zones *via* the constructs of trading zones and interactional expertise—new terminologies, new technologies, and new expertise. On this point, the editor Michael Gorman asserts that the volume as a whole presents a snapshot of an emerging trading zone (p. 5). The following is a review of a sampling of the essays in each section of the volume.

I. Introduction and Theory

The introductory essay by the editor identifies the purpose of the volume as the exploration of a new theoretical framework for understanding and promoting collaboration across disciplines and cultures. He acknowledges that the building blocks of the framework

¹ In the March 2012 issue of *Integrative Pathways*, Marina Pluzhenskaya begins and ends her review of *Case Studies in Interdisciplinary Research* by calling for analysis of collaboration. She makes the observation that many researchers are left wandering on their own, unable to find a common language with the dwellers of neighboring silos who are equally interested in crossing disciplinary boundaries. Pluzhenskaya, Marina. “Case Studies: Learning Lab for Interdisciplinary.” *Integrative Pathways* 34(1) (2012).

came from cutting-edge work in science, technology, and society (STS), history, and psychology of science. Two specific areas derived from previous STS research were targeted as promising leads: managing incommensurable research communities, and examining content expertise.

The framework, then, is an actualization of Gorman’s premise of how trading zones and interactional expertise could be combined for multidisciplinary collaboration (Gorman, 2002).

Based upon the interests and expertise of the workshop participants, there were varying views on the framework system under development. To address this variance, particular referents were identified as *boundary objects* for the purpose of collecting the range of meanings held by each participant. Critical features of the boundary objects were mapped and translated in order to establish a common representative understanding. Even at this early stage of the process, the role of language was pivotal in functioning as both a boundary object and as interactional expertise (p. 12).

Trading Zones

The essay “Trading Zones and Interactional Expertise” (Collins, Evans, and Gorman) asks how communication is managed where degrees of incommensurability exist. The answer(s) require, first, an explication of what trading means, what its constitutive elements are, and how these elements function. The authors present a detailed discussion using an intersecting axis-graph as a model that portrays quadrants of environments in which motivations, attitudes, behaviors, and most importantly, language and communication can be traced.

The framework consists of two intersecting axes: (1) Homogeneity/Heterogeneity, and (2) Collaboration/Coercion. Four quadrants result from this intersection and form a typology of spaces that characterize their respective types of communication: Homogenous/Collaborative = interlanguage; Heterogeneous/Collaborative = fractionated; Homogeneous/Coercive = subversive; and Heterogeneous/Coercive = enforced.

In the space where trading is **homogeneous and collaborative**, an *interlanguage* facilitates creation of new fields (e.g., biochemistry and nanoscience), a joining of two fields facilitated by shared mental models.

A fractionated trading zone is highly **heterogeneous**

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A REVIEW

Trading Zones and Interactional Expertise: Creating New Kinds of Collaboration. Michael E. Gorman, (Ed.), Cambridge, MA: The MIT Press, 2010. 312 pp. Paperback (ISBN 978-0-262-514935). \$30.

Trading Zones

(continued from page 11)

and collaborative. Within this type of trading zone are two sub-locations: *boundary objects* whereby a physical item holds a different meaning to the parties involved in the trade; while the second sub-location is *interactional expertise* whereby language is the operational medium, itself the variable to control for effect.

A **homogenous and coercive** space provides the potential for subversive trading (e.g., Microsoft Windows-dependent software, where preference to use different operating systems was not an option). Interestingly, consumers' resistance to such domination paved the way for the open source phenomenon that is currently proliferating and often free—creation of a new trading zone.

A **heterogenous and coercive** space engenders enforced trading (e.g., the clash between homeowners and the banking industry during the financial collapse). This type of trading zone can easily become institutionalized where the authority of expertise makes claims that can be enforced over other knowledge claims.

Interactional Expertise

The most fluid and productive communication occurs with what the authors term “interlanguage” where jargon, pidgin, and creole (in that order of comprehensiveness) serve to transact the communication—chemistry and biology fashioning the field of biochemistry is an example. The authors employ the clever use of metaphor to aid in understanding interactional expertise: (a) ‘out-talk’ is interactional expertise that is similar to the kind of practical research discussion that experts from another field can understand, i.e., versions of concepts that are stripped of the particular discipline-specific internal structures, and (b) ‘walking the

talk’ by using the language of the expert community in ways that are indistinguishable from the language usage of an expert practitioner. A significant reality-check is offered, however, in cautioning that such efforts to gain these competencies may take considerable time and effort, and ancillary support and funding.

The third essay, “Trading with the Enemy” by Peter Galison provides a nuanced critique on the concept of trading zones. Also through the use of metaphor, he views trade as the focus on coordinated, local actions that are enabled by the *thinness of interpretation* rather than the *thickness of consensus* (p. 36). Thin description is precisely what makes it possible for the experimentalist and the theorist to communicate, albeit in a register that by no means captures the full world of either, let alone both. Thinness is what makes it possible for the surface chemist to work with the atomic physicist, the virologist with the electrical engineer, the computer scientist with the molecular geneticist (p. 37). Thinness, as imagery, provides familiar associations in my own teaching and interests, where in studying globalization ‘lightness,’ ‘flows,’ and ‘liquids’ characterize movements of elements among nations, cultures, governance, and economic structures.

Galison posits a series of objections to trades that he suggests are self-destructive due to insufficient breadth of accountability. Objection 3 - Power and Diffusion, reminds us that the very nature of trading seems to presuppose a voluntary agreement between equals, as if power differences did not exist (p. 37). What happens when power asymmetry skews the nature of the exchange, or when scientific/technological actors exchange with humanities and literature actors? Even in highly homogeneous and collaborative pairings, unequal exchanges can occur. And although there may be interlanguage exchanges,

what precisely is infused in the interlanguage from each side?

Finally, he cautions that to explain such encounters as interdisciplinary and to be content that such work between groups satisfies the moniker of being interdisciplinary is to obscure important questions that remain. The domain of interdisciplinarity should address the *distributive conditions*

The Imitation Game consisted of a sequence of questions and answers (purely linguistic) to determine if participants are able to use the language in novel settings in much the same way as a contributory expert might (p. 59). The hypothesis that a person with interactional expertise (‘walk the talk’) should be indistinguishable from a person having expertise to perform the task was confirmed.

that infuse the interlanguage [italics mine]: Does one group donate the syntax (subordinate group), and the other group provide the lexical or referential structure (superordinate group)? (p. 40)

In the essay by Robert Evans and Harry Collins, “Interactional Expertise and the Imitation Game,” the authors address the question whether in order to ‘really understand’ another’s position, it is necessary to place oneself in the other’s shoes—to imitate that experience to the extent possible. To this end, an empirical test in the form of an imitation game was constructed to assess interactional expertise. The Imitation

Game consisted of a sequence of questions and answers (purely linguistic) to determine if participants are able to use the language in novel settings in much the same way as a contributory expert might (p. 59). The hypothesis that a person with interactional expertise ('walk the talk') should be indistinguishable from a person having expertise to perform the task was confirmed. 'Walking the talk' is possible and interactional expertise is an observable empirical phenomenon. There was positive support for the idea of trading zones in general and for the development of fractionated trading zones in particular (p. 68).

II - Applying Trading Zones and Interactional Expertise to Domains of Practice

In "Service Science: A New Expertise for Managing Sociotechnical Systems," Michael Gorman and Jim Spohrer note that in nearly every sector where there is exchange, including government, business, medicine, academics, consultation, and collaboration there is the need to help manage complexity in a time of accelerating technological change. To adequately address these complexities, a new kind of expertise in service sciences, management, and engineering (SSME) is needed.

The working definition of "service" is the co-creation of value *via* client-provider interactions (collaboration is a key factor). In this arrangement, service providers often have specialized knowledge that allows them to perform the service better, faster, and cheaper than clients could do on their own. It should also be noted that unlike in coercive power/dominance alignments, asymmetric knowledge is required.

The notion of the Service Scientist as an interactional expert is offered as a stimulus to promote the question, How would a novel

SSME expertise emerge, and how would we recognize it? The current state of development of SSME as a specialization in its own right depends upon multiple expert communities and conventional disciplines, and various stakeholders. Will SSME develop to a level that it can be sustained as a distinct expertise—full-fledged theory and praxis? What sorts of educational and certification programs may emerge? "Service scientists will need training in core disciplines, . . . [but] the interactional component will require every service scientist to gain skills in facilitating and managing trading zones, a new kind of competence that will draw on disciplines like anthropology and social psychology, but will move beyond what is currently known" (p. 95).

Jeff Shrager, in "From Wizards to Trading Zones: Crossing the Chasm of Computers in Scientific Collaboration," shares his intrigue with the problematic that with the prevalence of computers as a dominant tool by which to interpret reality, we have to come to terms with its corollary: Reality mediated by software engineers is "massaged reality." Shrager spent nearly three decades working to empower scientists to understand computing so they won't have to depend on software engineers to mediate science. Being aware that the computer serves as a collaborator in the drafting of reality, and that a chasm exists between biologists and computation, he chose to immerse himself in the area of biological expertise. He and fellow colleagues developed a specialized biological programming environment called BioBike where biologists ended up programming. A community arose through which biologists interacted directly with programmers, thanks largely to BioBike being a web-based platform that enabled participants around the world to work on the same problem through

shared screens—a BioBike "trading zone." This is an example of a dynamic creole that serves as locus of a scientific trading zone which emerged from the activities of the community of users and developers.

In "Authenticity, Earth Systems Engineering and Management, and the Limits of Trading Zones," Brad Allenby proposes that unlike evolutionary phenomena up to present times, the atmospheric, biological, and physical arenas are intertwined with cultural, economic, and technology factors that produce complexities between human and natural built systems. He asserts that the relationship between these is increasingly dominated by human activity ("Anthropocene"—the Age of Humans), and that their interaction is now "an existential aspect of human existence, not something that can be 'solved'" (p. 126). I find this a provocative irony in that he situates a defining characterization of the human (*being*) anchored in the context of technology.

There are five technologies bearing down on us: nanotechnology, biotechnology, robotics, information, and communication technology (ICT), and applied cognitive science (together, NBRIC) (Garreau, 2004). "We are able to perceive our world, and create our cultural constructs only through the lens that our technology provides" (p. 136). A technology of any significance will destabilize existing institutions and power relationships, as well as cultural assumptions.

Allenby offers anecdotal assessments regarding the coexistence of ideology and contingency, avowing that many groups cling to ideologies that embed anachronistic teleologies and assumptions about totalizing values: (a) ideologies are especially bad in a period of rapid, discontinuous, and fundamental change at a global, multicultural scale; (b) not everyone

(continued on page 14)

Trading Zones

(continued from page 13)

wants to communicate—knowledge is power in the Machiavellian sense; so therefore, maintenance of one's advantage governs the interaction; and (c) a trading zone as articulated here is oriented to Enlightenment Western values that support participatory processes and liberal democracy—avowedly not universal.

Lekelia D. Jenkins' "The Evolution of a Trading Zone" is a case study that tracks the types of interactions among stakeholder groups that occurred as a result of the effort to reduce sea turtle by-catch. She shows how the concepts of fractionated and enforced trading zones are useful in describing engagements between stakeholders.

The shrimping industry felt that government personnel had developed the turtle excluder device (TED) in a government backroom and were forcing it on them as the only acceptable solution to the turtle by-catch problem. The Sea Grant Agency, which was responsible for transferring information between the National Marine Fishing Service (NMFS) and the fishing industry could have brokered more productive understanding between them. However because of the controversial nature of the situation, Sea Grant Agency kept its distance.

Only after NMFS management asked shrimping industry representatives to publically request Sea Grant's help with technology transfer were concerns eased. It took four years of exercising interactional expertise in the trading zone to develop a new linguistic ability that establishes solid relationships between NMFS and shrimpers. Drawing on their interactional expertise and cultural understanding of the two groups, Sea Grant convinced shrimpers and government scientists to participate (pp. 168-169).

"A Network State Approach for Mapping System Changes"

(Matthew M. Mehalik) argues that one of the largest impediments to school district reform is the difficulty of aligning information systems and district data with decision-making capacities in the district. A second barrier is determining the ways a district's internal sociotechnical networks become integrated with how the information is collected, used, and implemented.

The purpose of this case study is to apply a network model to illustrate alignments of knowledge and stakeholders in complex organizations, such as the urban school district in Pittsburgh, PA. Key questions include "what trading zones exist in the organization? what holds them together?, for what reasons are they constructed? what new trading zones are needed?" (p. 182).

Mehalik makes the intriguing observation that "the school policies that get implemented are seldom the school policies that were designed." Instead of lamenting this condition, however, it is better to focus on what tools can prove useful to promote network shifts into different states that will accomplish the overall goals of a school system. He finds by using boundary objects (scorecard and policy construction tasks) groups approached the issues from separate shared mental models (p. 198).

III - Ethics and Trading Zones

"Ethics and Trading Zones Using Trading Zones to Prevent Normalized Deviance in Organizations" by Michael Gorman and Patricia Werhane looks at strategic approaches to meet investment and/or profit goals that can be created in a culture that reclassifies them as acceptable risk or in some cases, normal practice. Even when there is collaboration among different areas of expertise, the probability is that "anomalies" will be recognized and adopted. Reclassifying mounting problems as acceptable risks can lead an organization to ruin. The

example is given of WorldCom, in pressuring itself to meet expectations of securities analysts, created the environment to adopt highly irregular and unethical financial reporting as the norm.

Likewise with the shared sense of creating "mission statements": Not only does the collective experience of creating them serve to unite employees, but such statements also pose a coercive parameter—a 'superordinate goal.' Mission and goal creation is fraught with the potential to (a) link expertise that results in unequal power alignments, and (b) incorporate threats and obstacles to the mission by reclassifying them as normal practices.

Summary

It seems to me that instead of providing a framework for incommensurable research communities to work together to solve problems, *Trading Zones and Interactional Expertise* proposes a taxonomy and a set of variables that can be productive in the quest for collaboration schema. The range of evidenced-based expositions is strongly anchored in the theoretical base of the book, yet is rich and true to real-life situations. This is neither a manual nor a handbook, but a volume that reveals the strengths and rewards of grounded experimentation in the complex human enterprise of sharing and exchange where equalities, values, knowledge, skill, and motivation are charged and interdependent. This volume is a pronounced demonstration of the promised potential for interdisciplinary researchers' investigations of "communication of exchange" today may well become the disciplinary pillars of tomorrow (Galison, p. 33).

References

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AAC&U Schedules Summer Institutes

The Association of American Colleges and Universities (AAC&U) is accepting applications for its summer institutes.

The offerings include: the Institute of General Education and Assessment, June 1-5, 2013, the University of Vermont; the Institute on High-Impact Practices and

Student Success, June 11-15, 2013, University of Wisconsin-Madison; and the Institute on Integrative Learning and the Departments, July 10-14, 2013, Portland State University.

Information on applications can be found on the AAC&U website, www.aacu.org ■

JOBS IN INTERDISCIPLINARY STUDIES

Gonzaga University's Doctoral Program in Leadership Studies invites applications or nominations for a tenure-track, assistant professor to begin in September 2013. The program seeks candidates interested in joining the four current faculty members as part of an interdisciplinary team committed to supporting students and maintaining the international prominence of the program. Deadline for application is January 1, 2013.

The School of Urban and Public Affairs at the University of Texas at Arlington invites applications for the position of Director of the Interdisciplinary Studies Program. This program serves an academically and socially diverse group of more than 500 undergraduate students, providing the integrative learning skills they need to leverage coursework spanning the university's academic offerings toward individualized and rigorous Bachelors of Arts and Bachelors of Science degrees. The candidate will be hired as Associate or Full Professor of Interdisciplinary Studies. Review of applicants will begin immediately, but applications submitted and completed by January 4, 2013, will receive full consideration.

Spalding University invites applications and nominations for

the founding Associate Dean of Liberal Arts. The associate dean will provide leadership, planning, and supervision, in accordance with university policies and procedures, for all faculty, students, staff, services, programs and/or majors in Liberal Arts. Review of applications will begin immediately and continue until the position is filled; the anticipated date of appointment will be July 1, 2013.

Massachusetts College of Liberal Arts seeks an Assistant Professor in Interdisciplinary Studies, beginning in September 2013. The successful candidate will teach courses in the Interdisciplinary Studies Program at the introductory and advanced undergraduate levels, contribute to the Core Curriculum, and will coordinate the College's minor programs in both Women's Studies and Leadership.

Look for more information on these position openings in the Jobs in Interdisciplinary Studies section on the AIS Website, www.muohio.edu/ais. ■

SciTS Conference June 24-27

The fourth annual Science of Team Science Conference is scheduled for June 24-27, 2013, at Northwestern University in Evanston, Illinois. More information is available on the conference website, <http://www.scienceofteams.org/> ■

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INTEGRATIVE PATHWAYS

Szostak Book Selected as Theme for Competition

Cranmore Publications has announced the selection of *Restoring Human Progress* by Rick Szostak, Professor of Economics at the University of Alberta and AIS President, as the theme for the Andrew Cole International Prize Essay Competition 2013.

Restoring Human Progress outlines an interdisciplinary framework for restoring human progress. This framework contains proposals for reforming economics, culture, public policy, art, politics and science. It provides a roadmap for moving forward on ecological, technological, ethical, social and environmental issues.

Entries are sought which critically

engage with Professor Szostak's view concerning how human progress can be restored. Papers can either be sympathetic or critical of the author's view, and they can vary in scope from covering his entire framework to covering just one particular reform proposal.

The winning essay will receive a prize of £200 and the plan is to publish it in 2014. Full details of the competition, and of *Restoring Human Progress*, can be found at www.amazon.com/dp/1907962700/ref=nosim?tag=cranmorpublic-20 (click on the image below the image of the book cover on the Amazon webpage). ■

About AIS

The Association for Integrative Studies is an international professional association for interdisciplinary teachers, scholars, and researchers. The use of "integrative" in its name emphasizes the key feature of interdisciplinary activity, namely integration of insights from narrow disciplinary perspectives into a larger, more encompassing understanding. AIS serves as an organized professional voice and source of information on integrative approaches to the discovery, transmission, and application of knowledge. Founded in 1979, it is incorporated as a non-profit 501(c)3 educational association in the state of Ohio.

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