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PERSPECTIVE

The Annual Colloquium on International Engineering Education: How It All Began

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Editors' Note: This contribution is based on an address delivered by John Grandin at the [20th Colloquium on International Engineering Education](#), held at Northern Arizona University, November 2-3, 2017. With the goal of preserving this important history, we worked with John to adapt his remarks for publication in this inaugural issue of JIEE.

The Annual Colloquium on International Engineering Education began thanks to a dissemination grant from FIPSE (Grant No. P116P980009), The Fund for the Improvement of Postsecondary Education, an agency of the U.S. Department of Education (DoED). FIPSE was a highly competitive funding agency housed in the DoED, designed to support innovative change in higher education. It sought creative program models that could be broadly replicated at other institutions, and selected approximately 50 new awardees each year in the '70s, '80s, and '90s from roughly 2000 annual applications. FIPSE prided itself as a risk-taking agent and was managed by a very dedicated and supportive staff. FIPSE is unfortunately less known today, as it was diminished by congressional earmarks and a lack of interest among the DoED leadership, during both the Bush and Obama years when the focus was on No Child Left Behind and Race to the Top.

FIPSE had supported our initial launch of the URI International Engineering Program (Grant Nos. P116B870071, P116B900058, and P116B940493) and endorsed our contention that much more should be done on a broad basis to incorporate major international experience into engineering education. Through its program officers at the time, Sandra Newkirk and Michael Nugent, FIPSE endorsed the plan to share our model, and, as a part of that effort, to launch a gathering of like-minded educators to share their experiences with each other, find ways to support each other, spread the word, and eliminate the need to reinvent the wheel.

Michael Nugent is now the Director of the Defense Language and National Security Education Office in the Department of Defense (DoD) in Washington, DC. As a FIPSE program officer, he was one of the key advocates of our work at URI and thus a strong supporter of the idea of an annual colloquium. Mike attended the first Colloquium in 1998 and encouraged us to make this an annual meeting.

So, how do you start an annual conference from scratch? With FIPSE support to subsidize travel costs and accommodations, I sat down at my desk and began to call people I knew to be somehow connected with the idea of internationalizing engineering education and expanding the mission of foreign language education. One call led to another, with most people agreeing that such a meeting would make sense. I unfortunately do not have a 100% accurate list of 1998 attendees, but I do recall that we had crossed the thirty mark by the time of the meeting October 30-31, 1998. The following is a list of (most of) the participating institutions and attendees in 1998:

Representatives from academia:

- Ravi Jain, University of Cincinnati
- Bernd Widdig and Sigrid Berka, Massachusetts Institute of Technology (MIT)
- Lance Schachterle, Worcester Polytechnic Institute (WPI)
- Lester Gerhardt, Rensselaer Polytechnic Institute (GPI) and Global E3, the Global Engineering Education Exchange
- Richard Long, University of Connecticut
- Carl Altstetter, University of Illinois at Urbana-Champaign
- Richard J. Higgins, Georgia Institute of Technology
- Jörg Schwedes, Technische Universität Braunschweig
- Manfred Nettekoven, German Academic Exchange Service (DAAD)
- Michael Nugent, FIPSE
- Thomas Kim, University of Rhode Island I (Dean, College of Engineering)
- Many other URI colleagues in engineering and languages

Representatives from industry:

- Hilti Corporation
- TRW Corporation
- Mercedes-Benz USA
- Bayer Corporation
- Supfina Machine Company, Inc,

Soon to be followed in the next two years by representatives from:

- Virginia Polytechnic Institute and State University
- Michigan Technological University
- University of Pittsburgh
- Iowa State University

- Brigham Young University
- RoseHulman Institute of Technology
- Northern Arizona University
- Smith College
- Rice University
- Boston University
- Duke University
- University of Notre Dame
- Purdue University
- Valparaiso University
- School for International Training (SIT)
- Monterrey Institute of Technology and Higher Education (ITESM)

Representatives from professional societies:

- American Council on Education (ACE)
- National Academy of Engineering (NAE)
- Institute for International Education (IIE)
- American Society for Engineering Education (ASEE)
- American Association of Teachers of German (AATG)

In 1998 we had about 35 participants, in 1999 about 50 participants, approximately 80 in 2000, and by the fourth Colloquium in 2001 we could boast 166 registrants, including representatives from universities, corporations, non-profits, and governmental organizations, as well as students.

As mentioned above, I reached out to solicit some comments about the very first years of the Colloquium. I heard first from Bernd Widdig who was with us as an active participant and presenter for the first few Colloquia when he was Director of the MIT Germany Program. Bernd, by the way, attended along with his very competent assistant director, who was soon to take over the MIT Germany Program, before seeing the light and eventually taking over the directorship of the IEP at URI. (Yes, I mean Sigrid Berka!) Bernd had gone on to become Executive Director of Study Abroad at Boston University, and then Director of International Affairs at MIT. As Bernd stated in his reply to my inquiry:

First of all, it gave us trailblazers and pioneers a sense that we were not alone with our idea of integrating foreign language learning into engineering and science education. I still remember my personal excitement of finding like-minded people from different parts of academia.

While we all agreed on basic educational principles, we also became aware of the different institutional contexts in which we operated. It was

insightful to see how we all had conceptualized and developed our programs and activities within a unique institutional context.

Finally, having the corporate world as an active partner right from the start has been immensely important. I personally learned so much about the demand and challenges of internationally operating companies.

– Bernd Widdig (personal communication, May 26, 2017)

Manfred Nettekoven, who was Deputy Director of the NY office of DAAD (German Academic Exchange Service) at the time, also shared comments about the first Colloquium. Manfred is now, some twenty year later, Chancellor of RWTH Aachen University, arguably Germany's premier engineering education and research institution. We can be flattered that he, as a global leader in engineering education, looks back positively at our initial efforts to launch this Colloquium. I need to also mention that his major field of study, in the spirit of our Colloquium, was not engineering, but French! As Manfred notes:

The first colloquium for international engineering education at the University of Rhode Island that I attended took place in 1998. Britta Baron and I were eager to extend the portfolio of activities of the DAAD's office in New York and engineering was one of the scholarly disciplines that our institution hadn't been engaged with before we learned about John Grandin and a whole range of engineering schools that intertwined the linguistic, cultural and scientific side of international education and engineering. I didn't quite know what to expect at that first Colloquium in 1998, but remember being surprised by the amount of enthusiasm, the scope of activities, and the number of universities involved which made it a trademark in the agenda of programs that DAAD would sponsor.

When writing this little blurb, I sit at the desk of the Chancellor of one of the biggest engineering schools in Germany, hopefully also one of the most internationally visible. You never know what previous activities would lead to, but from the perspective of my current employment, I'm really glad that my Volkswagen beetle made it all the way to Kingston Rhode Island and that I had the opportunity to attend that colloquium and a number of tokens that would follow.

– Manfred Nettekoven (personal communication, June 20, 2017)

Despite the three years of success and growth of the early Colloquium, my staff, our engineering college leadership, our IEP Advisory Board, and I too wondered if we could keep this all afloat for another year. First of all, it was a lot of work, and we were not well funded or staffed. And the FIPSE start-up support for the Colloquium had expired. Was it wise to devote this time and energy when our own program was in itself so labor intensive? Would people come without any assistance for travel costs? I have to admit there were also those who thought, very shortsightedly, that encouraging others to build similar programs might bite into our own program.

With those doubts and doubters in mind while attending the annual conference of foreign language professionals that November (ACTFL/AATG), shortly after the third Colloquium, I found myself stopped in a hallway by Britta Baron, Director of the NY office of DAAD. She had attended in year three and wanted assurance that the Colloquium would continue. When I hesitated, Britta was concerned and pledged to do her best to help with our staffing needs and promised to provide direct funding for the next years of the Colloquium. Without her enthusiasm for the ideas behind this Colloquium, as well as that of Manfred Nettekoven, who had attended the first two meetings, we most likely would not be here today. Thank you for this help at a critical moment, Britta, and thank you DAAD! Britta Baron, by the way, served as Vice President and Associate Provost (International) at the University of Alberta, and more recently assumed a role leading international strategy development and programming at Humboldt University, Berlin.

Other tangible support came at that time from the corporate side. Siemens offered financial help over the next few years, as well as programmatic support. For instance, Siemens VP of human resources, Dr. Hans Höller, reported at the year 2000 meeting that finding American engineers with global skills was a high priority for their company. And our keynote speaker in 2001 was the CEO of Siemens North America, soon to be Siemens head worldwide, Dr. Klaus Kleinfeld. Beyond Siemens, we also enjoyed support from other global companies, such as Hilti, ZF, and Brown & Sharpe.

There are two other critical developments in the earlier years of the Colloquium that deserve attention. First, we at URI felt strongly after three colloquia that we should not be the sole organizers of the meeting. We had gotten feedback through questionnaires, but still needed input from others to avoid producing a similar program each year, and to ensure that we address the challenges people were facing in the trenches of their own institutions. Thus, the idea of a steering committee evolved, with representation from several institutions. Thanks should go out to all who have shaped the Colloquium through service on the Steering Committee, with special thanks to people like Gayle Elliott from University of Cincinnati who has served since the committee was created, as well as other long-term members such as Mark Rectanus from Iowa State University and Eckhard Groll from Purdue University.

A second modification grew out of the Steering Committee itself which suggested that the Colloquium be moved every other year from Rhode Island to another part of the country. Continuity would be guaranteed through URI's experience and the role of the Steering Committee, but moving to other institutions would bring in new ideas and also spread the travel burden from north to south and east to west. It would also share the exhaustion factor among multiple hosts. As a result, the Colloquium has taken place every other year outside of Rhode Island, beginning in 2005 at Georgia Tech. Purdue, Iowa State, Brigham Young, the University of Kentucky, the Institute for International Education in New York, together with DAAD, and Northern Arizona, have also been the hosts for meetings since that time. These institutions have all put their special mark on the colloquium, for which we are grateful.

The roster of locations and hosts since 2005 includes:

- 2005 Georgia Tech (Phil McKnight)
- 2006 URI
- 2007 Purdue University (Dan Hirleman, Eckhard Groll)
- 2008 URI
- 2009 Iowa State University (Mark Rectanus, Diane Rover)
- 2010 URI
- 2011 Brigham Young University (Alan Parkinson)
- 2012 URI
- 2013 University of Kentucky (Ilka Balk)
- 2014 URI
- 2015 DAAD and IIE (Nina Lemmens, Peggy Blumenthal)
- 2016 URI
- 2017 Northern Arizona University (Melissa Armstrong)
- 2018 URI
- 2019 (planned at University of Cincinnati)

After twenty years of experience, we can safely reflect on the special nature of our Annual Colloquium by asking ourselves what it is, what it is not, and what it has accomplished for whom. Though focused on engineering, it is important to stress that the Colloquium is not a technical meeting. It is not a meeting for engineers to gather with engineers from and in other countries to discuss technical issues. Simply put, our Annual Colloquium on International Engineering Education, unlike any other professional meeting, is a conference focused specifically on shaping curricula and putting programs in place to prepare engineering students, at both the undergraduate and graduate levels, to be able to work efficiently and confidently in today's truly global workplace.

The Annual Colloquium is an interdisciplinary meeting and absolutely unique in the way that it addresses the interests of multiple constituencies with a common goal. It is most certainly designed for engineering educators, but also language educators, international educators, cross-cultural communication researchers, program evaluators, higher education administrators, global business leaders, public policy leaders, international partners, and students. As such, it is truly a paradigm for interdisciplinarity in higher education, as it brings multiple constituencies together for a common end. In this sense, we are truly a unique conference.

The Colloquium has accomplished many things for its many constituencies. It has:

- Defined the need for global engineering education
- Presented program models to address current needs, including:
 - Short-term/long-term
 - Language-centered
 - Cross-cultural communication focused
 - Internships abroad
 - Study abroad/student exchange
 - Project-focused/research-focused
 - Humanitarian focused
 - Dual degree at bachelor's, master's, and doctoral levels
- Identified the challenges, the hurdles, the barriers
- Identified ingredients for success
- Stressed the importance of evaluating our work
- Identified resources for assistance and funding
- Explored collaboration with the private sector
- Explored the relationship between internationalization and diversity
- Defined a necessary research agenda
- Developed outlets for dissemination and publication
- Challenged the higher education system of rewards
- Expanded the foreign language mission in higher education
- Created a venue for networking with like-minded colleagues

All of these things are important and will require continued ongoing attention in the next twenty years. For example, the importance of providing a venue for networking at our meetings is exemplified in the comments I received recently from the aforementioned Britta Baron. While seeking to expand the place of DAAD in American higher education, she found and attended the third and fourth Colloquia where she could confirm the DAAD's potential connections with engineering education. And, as described above, she established the tradition of DAAD support for the Colloquium. As Britta explains:

Connecting DAAD and the study of German and Germany with Engineering was clearly opening so many new opportunities! From you,

your team and from the many other contacts that I was able to build at your colloquia I learned so much that inspired strategy building and program design in DAAD for the years to come. I remember very instructive meetings with Siemens staff members whom I met through your networks among many other contacts which I was able to develop thanks to you!

- Britta Baron (personal communication, June 17, 2017)

As is the case for networking, all of these issues deserve our ongoing attention. Though we have made tremendous progress in twenty years, we are still not at the point where we can close the doors and say we can each do it alone.

Finally, I would like to refer you to: A Report of the National Summit Meeting on the Globalization of Engineering Education which took place in Newport, Rhode Island in advance of the eleventh Annual Colloquium on November 5-6, 2008. Participation in the Summit, which was funded by the engineering division of NSF, was by invitation and included the division leadership from NSF, several deans of colleges of engineering, as well as educators with substantial experience in global education for students of engineering. The meeting was carefully planned and comprehensive in its approach to the issues, and culminated in a document signed by each of the participants known as the Newport Declaration to Globalize U.S. Engineering Education. The report in its entirety is available as a special issue of the Online Journal for Global Engineering Education (Grandin & Hirleman, 2008).

Melissa Armstrong has highlighted the Newport Declaration in the documents prepared for this meeting (the 2017 Colloquium) and has suggested that it be updated as a roadmap, if not for the next twenty years, at least for the next years. The Newport Declaration is, in my opinion, an excellent document demonstrating the widespread endorsement of its principles, and support by several of the nation's leading engineering educators. Its weakness is a lack of credible and able champions to perform the work in the trenches and be recognized for it. In brief, building effective international programming, including associated research and publications, needs to be legitimized as a tenurable activity by both engineering and humanities deans. Someone has to do the work, and for that someone to appear, he/she needs to be motivated by core institutional values. In short, it is time for a sharper and more open engagement on the part of deans, provosts, presidents, vice presidents and other national higher education leaders regarding this matter.

I hope with this summation of the earlier years of the Annual Colloquium to have shed some light on its roots and thereby encouraged us all to ensure another twenty years of productive collegiality. Thank you!

References

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